Implementing Community Climate Change Action Plans in Canada: The Relationship between Implementation Structure and Outcomes

By

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A thesis
presented to the University of Waterloo
in fulfillment of the
thesis requirement for the degree of
Master of Environmental Studies
in
Sustainability Management

Waterloo, Ontario, Canada, 2017

Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

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Abstract

This research in collaborative strategic management and cross-sector partnership is a study of structures and outcomes in the context of community-wide climate action plans and community-wide energy plans in Canadian cities. Specifically, implementation structures, plan outcomes, and partner outcomes were examined in four Partners for Climate Protection member municipalities: District of Saanich (British Columbia), City of Guelph (Ontario), City of North Vancouver (British Columbia), and City of London (Ontario). The study was conducted to qualitatively explore these concepts in a new context, to understand if there are relationships among them, and to see if there are new lessons learned, or if there are transferable lessons from a previous study in the context of community sustainability plans. The method of qualitative investigation involved interviewing key municipal staff about the implementation structures and both outcome types, and their respective cross-sector core implementation partner organizations regarding partner outcomes. Findings show that these community-wide plans have five implementation structures: communication systems, monitoring systems, partner engagement, partner action, and municipal oversight. Plan outcomes, where available, are positively oriented in the direction of reaching plan goals, and partner outcomes are identical to those identified in the previous study, with a new partner outcome finding – moral support. Findings show that the five implementation structures are crucial for enabling the achievement of plan outcomes, and that partnership design in general is sufficient to produce partner outcomes. The results of this study fill theoretical gaps in the literature around implementation structures for community-wide climate and energy plans; support findings from the larger study by qualitatively examining structures outside of the context of the larger study; provide information useful for the implementation of community-wide climate and energy action plans; and provide an understanding of implementation structures important for plan outcomes.

Acknowledgements

Thank you so much to my family, my supervisor Dr. Amelia Clarke, my committee member Dr. Sarah Burch, my friends and peers, ICLEI Canada, and every interviewee who participated in this research study.

This work was supported by Mitacs through the Mitacs Accelerate program, ICLEI Canada, and SSHRC.

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CHAPTER 1: INTRODUCTION

1.1 Introduction and Problem

As a significant portion of Canada's greenhouse gas emissions are directly controlled and indirectly influenced by municipalities (FCM & ICLEI, 2012), local governments hold an important role in climate protection (Deangelo & Harvey, 1998). Municipalities can influence emissions to an extent through their numerous roles; for example, they typically at minimal have partial control over land use and hold a key role in waste management (Deangelo & Harvey, 1998). A community climate action plan is a document capturing a set of strategies that a local government has committed to carrying out to reduce GHG emissions. Climate mitigation entails acting on climate change and reducing GHG emissions (ICLEI Canada, n.d.-c). Just in Canada alone, there have been more than 280 local governments committed to addressing climate change through membership in the Partners for Climate Protection Program (PCP) (FCM & ICLEI Canada, n.d.). An issue is how local governments may effectively implement community sustainability plans through sound structural features, thereby reaching desirable outcomes (Clarke, 2014).

Social problems, that are too large for a single organization to address, are addressed through cross-sector social partnerships (CSSPs) (Clarke, 2014). CSSPs are created when a larger social problem needs to be addressed, including formulation of a collaborative strategic plan (Clarke, 2014; Clarke & Fuller, 2010), under which community climate action plans can be categorized. Cross-sector social partnerships undergo a collaborative strategic management process. This process first begins with partnership formation, collaborative strategic plan formulation, both partner and partner-level implementation, and ends with realized outcomes, with multiple feedback loops throughout the whole process (Clarke & Fuller, 2010). Two of the six types of outcomes that can result from a collaborative strategic management process include plan-centric outcomes and partner-centric outcomes (Clarke & Fuller, 2010). Plan-centric outcomes are outcomes that are related to the results around which the partnership was initially created, whereas partner-centric outcomes are

outcomes related to the learning and adjustments in organizational behavior or structure of the individual partners (Clarke & Fuller, 2010).

Currently, there is a knowledge gap in the literature regarding the relationship between the implementation structures of community climate action plans and the two types of outcomes for implementing community climate action plans in Canada. This thesis seeks to fill this knowledge gap and provide new insights as a means of theoretical contribution. Practically, this knowledge would be useful to sustainability managers, sustainability practitioners, and also local government staff, as they can be informed of how implementation structures can be designed to positively contribute in addressing large social problems (namely, climate change through mitigation), and to further comprehend the relationship of structure and outcomes of community sustainability plans (Clarke, 2014).

Understanding the essential structures from Clarke (2011) in community climate action plans will be valuable as many communities have now decided to focus on tackling climate change issues as their introduction into sustainable development (Clarke, 2014). Implementation structures also affect what outcomes can be achieved (Clarke, 2011).

1.2 Research Questions

To study the relationship between collaborative implementation structures and outcomes of implementing Canadian community climate change action plans, the research questions below have been developed. Addressing the research questions will allow for greater insight into effective implementation structures specifically for climate action plans, and provide feedback into the larger conceptual framework being used.

1. What implementation structures are present during the implementation of municipal community climate action plans and community energy plans using a partnership approach in Canada? What are the plan outcomes and partner outcomes of the implementation of these plans?

2. What are the relationships, if any, between community climate and energy plan implementation structures, and plan and partner outcomes?

3. What lessons from previous studies regarding the relationship between implementation structures and outcomes of collaborative community sustainability plans are transferable to the context of community climate and energy action plans?

1.3 Purpose of Study and Research Objectives

The overall purpose of the study is to qualitatively, using a case study approach, explore community climate action plans, their implementation structures, plan outcomes and partner outcomes, as well as to draw conclusions about the relationship between collaborative implementation structures and plan and partner outcomes for community climate action plans in Canada.

The objective of research question one is to determine the presence of the implementation structures and describe the plan and partner outcomes from implementing the plans. Relating to research question two, the objective is to highlight the implementation structures that contribute to positive trends in plan and partner outcomes. Research question three's objective is to reflect on previously conducted studies on the relationship between key structural features and outcomes for implementing sustainable community plans. Theoretically, this will determine if structures relevant for implementing community sustainability plans can be transferable to the context of this research, or if adjustments are needed. This will make theoretical contributions to cross-sector social partnerships, and practically inform the design of implementation structures for desired outcomes (i.e., achieving community-wide GHG reductions and energy use).

To answer these research questions, a qualitative approach was taken using four Canadian municipalities as case studies. Data collection was conducted in partnership with ICLEI Canada – Local Governments for Sustainability – an association of local governments whose

mission is, "to build and serve a worldwide movement of local and regional governments that are committed to achieving tangible improvements in environmental sustainability" (ICLEI – Canada, n.d.a, p.1). ICLEI Canada is a very fitting partner due to having more than 30 years of professional development in the municipal realm (ICLEI – Canada, n.d.a), as well as having relevant data available for this study.

1.4 Philosophical Worldview

This research study subscribes to a pragmatic philosophical worldview. As described by Creswell, this worldview, “arises out of actions, situations, and consequences” (Creswell, 2014, pp. 39-40). This worldview explores applications, effectiveness, and takes a solution focused approach to problems (Creswell, 2014). Relevant to methodology, individual researchers have the flexibility to choose the methods, procedures, and techniques most appropriate for their purposes and needs (Creswell, 2014). Translating this worldview into the research, the present study is concerned with the "consequences" of having certain collaborative implementation structures in place to achieve the outcomes of Canadian climate action and energy plans. The knowledge gained from this study is about implementation structures that may influence positive outcomes. This worldview also has implications for dissemination, as the information and analysis may be useful to and applicable to certain local governments and municipal associations, such as ICLEI Canada.

1.5 Thesis Roadmap

The introduction chapter above is followed by the literature review chapter, methodology chapter, results chapter, discussion chapter, and conclusions chapter. The literature review (Chapter 2) provides a comprehensive and updated background of theory and knowledge that informs the research questions and demonstrates the research gap present. The methodology chapter (Chapter 3) outlines and details the approach to inquiry. This study uses a qualitative case study approach with data collection from interviews and archival and document sources. This section also details methodological limitations and control, reliability and validity, as well as the research partnership with ICLEI Canada. The results

section (Chapter 4) presents organized findings, first for each of the four communities in depth, and next presenting cross-case findings. The discussion chapter (Chapter 5) offers a discussion of the research findings and provides answers to research questions while reflecting back to the larger theory. Lastly, the conclusions chapter (Chapter 6) summarizes the theoretical and practical knowledge contributed, the limitations, and the opportunities for future research.

CHAPTER 2: LITERATURE REVIEW

2.1 Overview of Literature Review

The literature review chapter encompasses six topics as they relate to the research question – sustainability and municipal sustainable development, climate change, climate action plans in Canadian municipalities, climate change governance, implementation structures, and outcomes of the collaborative strategic management process. The topics begin with broader theories from the literature and narrow to the conceptual framework. This research builds on previous studies conducted by Dr. Amelia Clarke and respective associated academics (Clarke & Fuller, 2010; Clarke, 2011, 2012, 2014), which will be presented as part of the conceptual framework section on collaborative strategic management while also integrating existing relevant literature.

2.2 Sustainability and Municipal Sustainable Development

2.2.1 Sustainability

Historical evidence strongly suggests that ecological factors were important to the rise and fall of ancient civilizations and the agricultural and industrial social transformations (Mebratu, 1998). In examining human knowledge from religious teachings, medieval philosophies and traditional beliefs, Mebratu (1998) notes that "living in harmony with nature and with one another" (Mebratu, 1998, p.517-518) is at the core of what is known today as sustainability (Mebratu, 1998). "Living in harmony with nature and with one another" (Mebratu, 1998, p.517-518) was found to be a strong element in the areas of human knowledge that were examined.

Over time, two major developments arose in the concept of sustainability: 1) conceptualizing sustainability into three spheres (environmental, social, and economic); and 2) subscribing to weak sustainability or strong sustainability (Kuhlman & Farrington, 2010). While strong sustainability posits that resources should not pass a certain

threshold, weak sustainability accepts the passing of some resource thresholds as long as there is substitute capital available for future generations (Kuhlman & Farrington, 2010).

Sustainable development is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987, p.43); a definition politically legitimized and widely made known by the World Commission on Environment and Development (Mebratu, 1998; Parkinson & Roseland, 2002). The vagueness of this term, however, has led to many definitions and interpretations (Mebratu, 1998). More recently, the 2030 Agenda for Sustainable Development outlines 169 targets between 17 Sustainable Development Goals with the objective of putting an end to human poverty and to "heal and secure" the planet, which is required for sustainable development (United Nations, n.d.). However, understanding the broader underpinnings of sustainability reveals how sustainable development may have interest biases instead of developing further the core of the concept of sustainability (Mebratu, 1998).

2.2.2 Sustainability and Local Governments

Sustainability is an ongoing discussion in the international arena as well as at the local level. In fact, communities are the first to be impacted by sustainability issues such as poor air quality and poor water quality, directly affecting their daily life and health (Baxter & Purcell, 2007). Specifically, for Canadian municipal governments, it is important that they put municipal operations, programs, and services in place to advance their own sustainability, and also to work with community representatives to mobilize community members to engage in sustainable development challenges democratically and justly (Parkinson & Roseland, 2002).

The Brundtland Report in 1987 created the consideration that cities are important actors to addressing sustainable development. Since then urban sustainability has gained traction internationally (Bulkeley & Betsill, 2005). Further along the timeline, in 1992 at the Earth Summit (United Nations Conference on Environment and Development), even though the main goal of the Summit was to create commitment from countries on global

environmental concerns, one of the results that arose was the international focus on cities as playing a central role in the Earth's ecosystem (Brugmann, 1996). The United Nations Conference on Environment and Development (UNCED) recognized that local authorities needed to construct, operate, and maintain infrastructure for all three pillars of sustainability, and to oversee planning processes, establish policies and regulation, and help in implementing policies from higher levels of government (Brugmann, 1996). In the 1996 UN conference on Human settlements, Habitat II resulted in an even greater recognition by the UN towards the role of local governments in sustainable development (Brugmann, 1996). Since the local government is the level of governance closest to the people, they plan an important role in education, mobilization, and public response to promote sustainable development is an important role (Brugmann, 1996; Saha, 2009). Not only are local governments the closest level of governance to the people, they are considered to be at a further distance away from fossil fuel lobbies that influence national politics (Saha, 2009). Even the Secretary General of the UNCED pointed out that if cities do not lead the way in sustainable development, sustainable development will not be possible. It was following this moment of recognizing local governments and their role in sustainability that national level governments have been giving important planning and management power to local authorities (Brugmann, 1996).

The 1992 UNCED produced Agenda 21, articulating the role of local governments and sustainability (Brugmann, 1996). This has since manifested into approximately ten thousand local governments that have engaged their local communities in Local Agenda 21s (ICLEI, 2012). Agenda 21 demonstrated the necessity of local action to accomplish the goals of the Earth Summit, and the UN Framework Convention on Climate Change (Parker & Rowlands, 2007). Alongside the 1998 Canada-wide Accord on Environmental Harmonization, the federal government expressed an interest in taking a lesser role than the provinces in environmental regulation (Rabe, 2007). These trends have shown the diminished role of the Canadian government in sustainability and the increased role in lower levels of government, harnessing their regional knowledge.

Goal 11 of the 2030 Global Sustainable Development Goals is to, "make cities and human settlements inclusive, safe, resilient and sustainable" (United Nations, n.d.), which include reducing adverse per capita environmental impacts of cities, and having more cities mitigate and adapt to climate change (United Nations, n.d.). An element of goal 17 of the 2030 Global Sustainable Development Goals, although speaking about global partnerships for sustainable development, shares fundamental ideals of this present study to encourage and promote effective cross-sector partnership, "building on the experience and resourcing strategies of partnerships" (United Nations, n.d.).

Additionally, Canada ratified The 2016 Paris Agreement, where many nations have come together to limit the global temperature rise to below 2 degrees Celsius above pre-industrial levels (United Nations Framework Convention on Climate Change, n.d.). The New Urban Agenda was adopted at U.N. Habitat III in 2016, and commits to sustainable urban development, recognizes a city's role and impact in adapting to, and mitigating climate change for, an environmentally sustainable urban development (United Nations, 2016).

Environmental protection has political and empirical recognition but is further recognized as tied to social justice and community economic health (Saha, 2009). According to the Institute for Sustainable Communities, "A sustainable community is one that is economically, environmentally, and socially healthy and resilient" (Institute for sustainable communities, n.d.), taking long-term perspectives and addressing challenges with integrated solutions (Institute for sustainable communities, n.d.). There are exemplary cases to show that it is possible to grow without traffic congestion, pollution, and space privatization (Dulal & Akbar, 2013). For more than forty years, the city of Curitiba in Brazil used policies to help urban growth while improving the quality of life and social equity, and maintaining the natural environment (Dulal & Akbar, 2013). Through the functions that municipalities have in Canada, there is potential for creating sustainable communities (Burch, 2010a).

An integrated community sustainability plan has an integrated and long-term framework and is multidimensional (Calder & Beckie, 2011). Integrated community sustainability

plans arose as a concept in 2005 with the Gas Tax Agreement (Baxter & Purcell, 2007). This is a funding program from the federal government created to support community infrastructure and long-term planning (Baxter & Purcell, 2007; Calder & Beckie, 2011). Using such a sustainability framework for municipal development and planning has been encouraged in Canada through gas tax agreements (Calder & Beckie, 2011).

Sustainable community plans are developed with public consultation (Clarke, 2012). They have a vision and sustainability goals for the community (Clarke, 2012). Sustainability issues can include waste and air quality management, transportation, land use, and planning (Bulkeley & Betsill, 2005). These sustainability strategies are both plans and processes, from engaging community stakeholders in creating a common vision, to connecting those elements towards realistic planning (Baxter & Purcell, 2007). For sustainability planning, Canadian communities have the means to fund for the development of these plans, studies, and projects through FCM's (Federation of Canadian Municipalities) Green Municipal Fund (FCM, 2016b).

2.3 Climate Change

2.3.1 Climate Change

The past 25 years have seen large changes to the issue of climate change as well as to the approach and perspective of the problem – it has changed from an issue that was mostly the concern of natural scientists to top of the agenda in global policy (Bernauer, 2013). The first legally binding amendment to the 1992 United Nations Framework Convention on Climate Change (UNFCCC) was the Kyoto Protocol, which sought to prevent adverse anthropogenic changes to the climate system (Deangelo & Harvey, 1998). The UNFCCC also asked for awareness of the stabilizing of greenhouse gases levels, and the Kyoto protocol detailed GHG emission limits for industrialized countries (Bernauer, 2013). In December 2011, Canada made the announcement that it would withdraw from the Kyoto Protocol (Environment and Climate Change Canada, 2013), but ratified the 2016 Paris Agreement to which many nations collectively aim to limit global temperature rise (United Nations Framework Convention on Climate Change, n.d.).

In the geophysical sciences, it has been shown that climate change (which is defined as "long-term changes in temperature and precipitation patterns"), has been common and occurring throughout Earth's history (Bernauer, 2013). Through the burning of fossil fuels, when large emissions of GHGs (e.g., carbon dioxide and methane) are released into the atmosphere, changes to the composition of the atmosphere occur, with higher concentrations of these GHGs in the air (Bernauer, 2013). As a result of these GHGs trapping excess energy in the atmosphere, the increased concentrations translate into higher Earth surface temperatures, leading to unwanted extreme weather events, natural disasters, rising sea levels, and biosphere consequences (Bernauer, 2013). Such extreme weather conditions have ensued since the 1950s, some of which being related to anthropogenic influences (IPCC, 2014). Over most continental regions, anthropogenic influences have likely contributed considerably to increasing surface temperatures as of the mid-20th century (IPCC, 2014).

Although these patterns may have occurred throughout history, climate change due to anthropogenic reasons is inarguably evident. Humanity's impact on the Earth's climate began in the late eighteenth century with the rise of the Industrial Revolution (Bernauer, 2013). Human activities that have dramatically impacted the natural environment include large-scale industrialization and land use (Bernauer, 2013; Chen, Chen, & Fath, 2014; IPCC, 2014). Other activities include the destruction of natural habitats, overharvesting of species, biota homogenization, and toxins release (Hansen, Sato, & Ruedy, 2012). Even more concerning, recent anthropogenic emissions of GHGs have been the highest they have ever been in history; and changing climates affect human and natural systems (IPCC, 2014).Major drivers are unprecedented economic and population growth (IPCC, 2014).

There are many sources of GHG emissions, as well as environmental, social, and economic consequences. Rising sea levels, warmer ocean temperatures, and decreased ice have all been observed (IPCC, 2014). The fact that natural and human systems are impacted due to climate change shows that humans and the natural environment are responsive to climate change (IPCC, 2014) – and also vulnerable. The most recent fifth assessment report from

The Intergovernmental Panel on Climate Change (IPCC) states that climate change would cause a decrease in extreme cold temperatures, an increase in warm temperature extremes, a rise in sea levels, an increase in frequency of regional heavy precipitation events, a rise of Earth's surface temperature, longer and more frequent heat waves, and ocean acidification (Hansen et al., 2012; IPCC, 2014; Karl & Trenberth, 2003). The climatic change that is most likely to affect humans would be the alterations to the summer season, given that this is the season of most biological productivity (Hansen et al., 2012).

Summer would be characterized by extremely warm temperatures and other anomalies (Hansen et al., 2012). The warmer summer temperatures translate into warmer spring and fall seasons, prolonging summer as a result (Hansen et al., 2012). In some geographic regions, freezing in the winter is important for minimizing post-winter pests and outbreaks of disease (Hansen et al., 2012). Warmer winters have caused epidemics of pine bark beetles in the forests of western Canada (Hansen et al., 2012), aiding in the destruction of an important primary resource for the nation. Bird and insect impacts are sometimes even noticeable by the public as average temperatures continue to rise over time (Hansen et al., 2012).

Climate change has an urgency internationally (FCM & ICLEI, 2016). Many cities acknowledge that carbon-intensive activities are not sustainable. However, with the increase in people wanting to own vehicles and technology that is energy consuming, requiring carbon-intensive processed foods, and increasing urban industrialization, GHG emissions are increasing in mega cities and second-tier cities in developing countries (Dulal & Akbar, 2013).

To summarize, ongoing GHG emissions will cause further global warming and changes in the climate system, increasing the chance that there will be permanent impacts of natural and human systems (IPCC, 2014). However, climate risks and effects of natural disasters will unevenly affect different people, with some more disadvantaged than others (IPCC, 2014). Contemporary and accelerated climate change is mostly due to anthropogenic causes and anthropogenic alterations of atmospheric composition (Bernauer, 2013; Karl &

Trenberth, 2003). However, even if these anthropogenic emissions were to be ceased, present day emissions continue to have impacts on Earth that will last for centuries (IPCC, 2014).

2.3.2 Local Climate Mitigation

Addressing climate change at the scale of the city may be most fitting since cities produce waste and consume a lot of energy (Bulkeley & Betsill, 2005; Deangelo & Harvey, 1998). In addition, Deangelo and Harvey (1998) discuss three more reasons for local governments to be suitable proponents of addressing climate change. Most importantly, organizations which are likely to be barriers to climate change (such as the oil and automobile industries) typically do not operate at a municipal level. Also, it appears easier to create action plans that are actually able to be carried out at the local level. Third, at the local level, it is sometimes easier to find actors to carry out those actions.

Additionally, not only is addressing climate change at the local level fitting, local governments are considerably suited to play the key role of initiating actor (Deangelo & Harvey, 1998). Bulkeley and Betsill (2005) note that local governments have a certain influence over emissions from waste production and energy consumption through processes such as energy management, transportation, planning, and waste management (Bulkeley & Betsill, 2005). Additionally, the increase in development of Local Agenda 21s have demonstrated that local governments are willing and capable of addressing sustainability development (Bulkeley & Betsill, 2005). Further, local authorities have an important role in the coordination of partner actions, and getting the community involved with policy programs (Bulkeley & Betsill, 2005). Lastly, there have been instances where local governments have good experience in handling environmental issues, which can act as showcases for new challenges (Bulkeley & Betsill, 2005).

Cities are not only key actors in sustainable development, but also key contributors to greenhouse gas emissions, responsible for approximately 75 percent of global energy use and up to 80 percent of global GHG emissions (Dulal & Akbar, 2013). Climate change affects urban areas in the form of floods, droughts, and heatwaves and other climatic events that

can be felt by community members (Demuzere et al., 2014). It may be to the cities' advantage to reduce GHG emissions now given that future environmental remediation and improvement costs will be greater than the costs of mitigation today (Dulal & Akbar, 2013). Greenhouse gas emissions reductions would also be beneficial to current and future urban populations, considering the intergenerational distribution element (Dulal & Akbar, 2013), as defined in the Brundtland definition of sustainable development. According to Dulal and Akbar (2013), the current generation can reduce health care costs and productivity loss, whereas future generations would experience reduced climate change consequences (Dulal & Akbar, 2013). Benefits of economic attractiveness are also likely to arise from pollution reduction (Dulal & Akbar, 2013).

In taking action towards climate change, early public recognition of this phenomenon is essential (Hansen et al., 2012). Heat waves and record floods have grabbed the attention of the public, whereas global warming effects have not quite garnered the same public attention (Puppim De Oliveira et al., 2013). With local authorities seen as promising agents for climate change mitigation (Kasa, Leiren, & Khan, 2012), efforts to reduce GHGs at the local level should be implemented widely.

2.3.3 Community-Wide Climate Mitigation

Local governments have significant control and influence over GHG emissions on a scale that can contribute to a nation's international reduction targets (Bulkeley & Betsill, 2005); and many mitigation efforts are under municipal jurisdiction (Kasa et al., 2012). Climate mitigation can include integration of land use, transportation planning, and greening of infrastructures (Kasa et al., 2012).

Effective answers to climate change will require a holistic transformation of the carbon-intensive energy system at all levels, asking for an understanding in climate governance, science and policy, and public opinion (Bernauer, 2013). Most notably, climate change is an issue that requires global collective action for the fact that it is an accumulation of emissions by all individuals, companies, and countries (IPCC, 2014). The IPCC fifth

assessment report highlights the importance of collective action – that mitigation will not be possible if single parties act according to their own interests only (IPCC, 2014).

Climate mitigation and adaptation can address climate change together, but effective implementation takes further requirements of supportive policies and cooperation at all levels and scales, while implementation can be further complemented if it connects to social goals (IPCC, 2014). Collaborative mitigation efforts are one of the major recurring ideas that is repeated throughout the Intergovernmental Panel on Climate Change's Fifth Assessment Report. It has been said that mitigation avenues are possible in all major sectors, and cross-sector mitigation efforts are more cost-effective in reducing emissions than concentrating on single technologies or sectors (IPCC, 2014). Better results from tackling climate change can come from well-managed actions that coincide with societal aims (IPCC, 2014; Puppim De Oliveira et al., 2013). Much of the literature points to the importance of collective action at all levels and across all sectors. Collaborative climate change mitigation efforts are needed; and at the local level, this translates not only to municipal action, but community-wide mitigation, involving important partners and stakeholders to achieve a common goal.

For industry, for example, the energy supply sector can avoid committing to carbon-intensive infrastructure, and individual mitigation activities can include personal lifestyle and behavioural changes such as through personal consumption and energy use (IPCC, 2014). There have been instances in Asian cities where climate mitigation has provided numerous co-benefits that have contributed to urban sustainability and to social problems (Puppim De Oliveira et al., 2013).

2.4 Climate Action Plans in Canadian Municipalities

Climate warming trends in Canada over the second half of the twentieth century has seen an average increase of 1^{o}C (Lemieux & Scott, 2005). As Canada is a northern country, Canada is estimated to have regions with warming twice as much as the global average temperature increase (Lemieux & Scott, 2005).

In Canada, distinct levels of government have different areas of responsibilities. There are also some differing and divided environmental responsibilities between the different levels (Parker & Rowlands, 2007). For example, the federal government has the power to ratify international conventions on the environment and climate change, as well as set environmental standards and procedures for impact assessments (Parker & Rowlands, 2007). Provinces have control over natural resources, whereas local governments have influence over transportation, and land use (Parker & Rowlands, 2007). ICLEI - Local Governments for Sustainability have supported many municipalities for climate action (Parker & Rowlands, 2007), including in Canadian municipalities, alongside the FCM (Federation of Canadian Municipalities).

Climate action plans in Canada (through the PCP program as explained below) is a document containing climate change mitigation strategy. Laukkonen et al. (2009), explain the dichotomy between climate change mitigation and climate change adaptation. Aiming to reduce the impacts of climate change is mitigation, whereas adaptation would be coping with the impacts (Laukkonen et al., 2009). Mitigation measures aim to decrease GHG emissions (such as switching to efficient modes of transportation), and adaptation actions include strengthening infrastructure to withstand climate change impact. According to the IPCC (2014), climate change adaptation and mitigation are complementary ways by which to lessen and reduce the risks of climate change, perhaps leading to sustainable development.

The first Canadian city to have an emissions reduction target was Toronto, and in fact, their emissions reduction target was set seven years before the Kyoto Protocol targets (Kousky & Schneider, 2003). It was in October of 1988, where leaders from 46 countries attended the Toronto Conference on Changing Atmosphere, when the first reduction target was pioneered (Robinson & Gore, 2005). The “Toronto Target” was to reduce GHG emissions by 20% of 1988 levels by 2005; it was not achieved (Robinson & Gore, 2005). The PCP (Partners for Climate Protection Program) launched in 1994 with six starting municipalities (FCM & ICLEI, 2016) has more than 280 Canadian communities currently

that are a part of the program (FCM & ICLEI, 2016; FCM & ICLEI Canada, n.d.); and more than half of Canadians live in a municipality that is committed to climate change mitigation (Gore, 2010). Communities have differences in their emissions profiles (Deangelo & Harvey, 1998), each having different energy supply structures (Kasa et al., 2012) and different policy and jurisdictional contexts, hence the importance of understanding community contexts and background profiles.

The Partners for Climate Protection (PCP) is a partnership between FCM and ICLEI Canada and is the Canadian component to the CCP Campaign (ICLEI Canada, n.d.-b). ICLEI is an association of local governments whose mission "is to build and serve a worldwide movement of local and regional governments that are committed to achieving tangible improvements in environmental sustainability" (ICLEI Canada, n.d.-a, p.1). FCM (Federation of Canadian Municipalities) is a representative group of member Canadian Municipalities, representing municipalities on the federal stage (FCM, n.d.). In the same budget year as the gas tax was introduced in 2005, the Liberal government made a single contribution of $300 million to FCM's green municipal fund aiming to help municipalities realize their community sustainability goals (Gore, 2010).

The international CCP (Cities for Climate Protection) campaign started in 1992 and encouraged local governments to adopt mitigation policies and commit to following the five-milestone framework for emissions reductions (Kousky & Schneider, 2003). The Canadian PCP program uses the same five-step approach (Gore, 2010). Since FCM partnered with ICLEI in the mid-1990s, there has been a slow but consistent increase in the PCP program membership, even though some Canadian municipalities had already started reducing emissions in 1988 (Gore, 2010).

Energy demand to meet basic human needs is increasing (IPCC, 2011), and other comparable efforts to climate action plans in Canada are community energy plans. Community energy plans are being increasingly formulated in Canada, and previous regional-only energy decisions are shifting to the community (St. Denis & Parker, 2009). Relatedly, the Municipal Energy Plan (MEP) program, which was launched in 2013, helps

municipalities to understand local energy demand, and helps to identify areas for energy efficiency, greener energy, and planning to meet goals (Ontario Ministry of Energy, 2016b). The MEP will help municipalities in Ontario to assess energy use and GHG emissions, look for opportunities to conserve energy, increase efficiency and reduce greenhouse gases, consider future growth impacts and local clean energy generation, and help with local economic development (Ontario Ministry of Energy, 2016b). The top reductions that local governments report to reducing energy use are: municipal buildings, municipal fleets, waste reduction, residential and green buildings, and a shift to public transit (Aylett, 2014).

Climate and energy plans have many associated plan terms. Some examples are Local Action Plans (LAPs), Municipal Energy Plans (MEPs), Community energy and emissions plans (CEEPs), Energy and GHG Management Plans, Integrated Community Energy plans (QUEST, 2016). The plans are very similar and contain many of the same content and goals (QUEST, 2016). Both community climate action plans and community energy plans are assessed in the PCP program.

2.4.1 Corporate Plans Versus Community-Wide Plans

The earth's atmosphere is a global common. The common atmospheric space is where people can deposit gas through activities such as energy and production, resulting in free ridership problems (Bernauer, 2013). The PCP program's five-milestone framework differentiates between corporate and community-wide GHG inventories (ICLEI & FCM, n.d.). Corporate level climate action plans deal with emissions only directly controlled by the local government (ICLEI & FCM, n.d.). Community climate change action plans set emissions reduction targets beyond emissions directly controlled by the local government, such as business and civil society sectors (ICLEI & FCM, n.d.). Canadian municipalities control and indirectly influence over 44% of the GHG emissions (FCM & ICLEI, 2012). Local authorities are responsible for transportation, energy, land use. and waste management (Burch, 2010a; Lindseth, 2004); and mitigation options are viable in every major sector (IPCC, 2014), even at the individual level. While the word 'corporate' typically denotes a private sector organization, it is also used by Canadian municipalities to term their

government operations, including infrastructure and waste management, versus community-wide initiatives (Clarke, 2011). Sustainable development at the community-level requires more than corporate efforts, and must include community-wide ones as well (Clarke, 2012).

A corporate or municipal GHG inventory accounts for emissions created from the local government's operations and services (ICLEI & FCM, n.d.). The GHG inventory of the community will be much larger, and the government will have limited control over these activities (ICLEI & FCM, n.d.). The community GHG inventory is documented by the local government as accurately as possible to capture the most significant emissions, but practically-speaking, local governments do not have all the needed data and access to resources to do so (ICLEI & FCM, n.d.). The corporate inventory is a subsector of the community inventory and typically falls within the entire sphere of the community emissions inventory (ICLEI & FCM, n.d.). When the corporate inventory falls outside the community inventory is when, for example, air travel is accounted for in a corporate inventory (ICLEI & FCM, n.d.). Different local governments have varying roles and responsibilities (e.g., some waste disposals are controlled by local governments; some are outsourced) (ICLEI & FCM, n.d.). In the PCP program, emissions are counted into the corporate inventory when local governments have operational control over the emissions and are thus required to report those emissions (ICLEI & FCM, n.d.).

2.4.2 The Five-Milestone Framework Partners for Climate Protection Program

The PCP program is a five-milestone framework program. The milestones are usually completed in order from the first to the fifth, but some municipalities may begin at the third step of formulating an action plan to begin reducing emissions immediately (ICLEI & FCM, 2008).

Milestone 1 of PCP involves creating a GHG inventory as well as forecasting (ICLEI & FCM, 2008). A GHG emissions inventory is a repository of information that quantifies the energy used by the community and corporate operations as well as solid waste generated (ICLEI & FCM, 2008). Information for the community GHG quantification documents data from

institutional, industrial, commercial, residential waste and transportation sectors, and corporate quantification contains data from municipal government operations and facilities (e.g., buildings, street lights, corporate solid waste, energy, etc.) (ICLEI & FCM, 2008). In greenhouse gas quantification, GHG emissions are typically measured in carbon dioxide equivalents (CO_2e) (Clarke, 2011; ICLEI & FCM, 2008). There are three principle greenhouse gases that are measured: CO_2, N_2O, and CH_4 (ICLEI & FCM, 2008), and expressing them as CO_2e allows for direct comparison between different total GHG emissions (Clarke, 2011).

Milestone 2 of the PCP program involves setting an emissions reduction target (ICLEI & FCM, 2008). This target expresses the amount of emissions the local government aims to reduce through emission reduction actions that would be stated in the action plan, typically declared as a certain percentage decrease from a measurement in a select baseline year (ICLEI & FCM, 2008).

Milestone 3 of the program is the formulation of a local action plan – which is a strategic document stating how the community or corporation will act to achieve the emissions reduction target (ICLEI & FCM, 2008). This document must also make connections with other official municipal documents, such as planning documents (ICLEI & FCM, 2008). Communities can create two distinct local action plans, one for corporate operations only, and one for the entire community (ICLEI & FCM, 2008). While communities can develop one or both, community action plans can considerably decrease greater GHG levels (ICLEI & FCM, 2008).

Milestone 4 of the program is the implementation of the plan or activities (ICLEI & FCM, 2008). Municipal staff are charged with implementation initiation and implementation momentum, but non-governmental and private sector contractors may also be involved in this milestone (ICLEI & FCM, 2008). Corporate activities to reduce GHGs are exemplified by existing building retrofitting with green building standards, and replacing inefficient lighting with LEDs (FCM & ICLEI, 2012). Examples of corporate action to reduce GHGs in the community include creating a composting program, creating water conservation

programs, creating community-wide awareness and financial incentives for waste disposal (FCM & ICLEI, 2012). In sustainable community plans, partner organizations can include large companies, organizations representing small companies, non-governmental organizations, and other public institutions (Clarke, 2012).

Finally, Milestone 5 monitors the progress and reports the results (ICLEI & FCM, 2008). Specifically, activities in this milestone include tracking outcomes of individual activities to reduce GHGs, updating the GHG inventory, stakeholder engagement, and reporting to stakeholders as well as FCM (ICLEI & FCM, 2008).

2.4.3 Current Status of Climate Action

The year 2014 marked the year that the PCP program had been running for 20 years with 212 climate action plans created (FCM & ICLEI, 2016). In the PCP program, an increasing number of Canadian municipalities have satisfied most or all of the milestones of the PCP program (Gore, 2010). However, most of the municipalities have completed two or fewer milestones while even fewer have completed three of the five milestones (Gore, 2010). The PCP program has published the National Measures Report since 2008 (FCM & ICLEI, 2016). The latest published report is for the year 2015, which outlines progress and contains aggregated information about how municipalities are doing (FCM & ICLEI, 2016). From the surveyed municipalities, more than 90 percent are developing policies and plans to reduce corporate emissions, and 87 percent of those policies and plans are being developed, adopted, or implemented (FCM & ICLEI, 2016).

In the 2015 National Measures Report, the primary content identified trends in local action planning, current status, and future municipal climate change action directions (FCM & ICLEI, 2016). The data for the report was derived from 82 municipalities, 90% which are member municipalities who responded to a survey done in 2015, and a review of member climate action plans and community energy plans in the past five years (FCM & ICLEI, 2016). Community adaptation to climate change was also mentioned in the report. Many localities in Canada are already feeling the effects of climate change in the form of extreme weather events – droughts, intense storms, heatwaves, etc. These impacts have prompted

communities to begin climate adaptation at both corporate and community levels (FCM & ICLEI, 2016).

Even though 80 percent of surveyed municipalities are in the midst of developing policies and plans to reduce community-wide GHGs, this rate is still lower than plan and policy development for corporate GHGs (FCM & ICLEI, 2016). In addition, community climate action plans have comparably fewer milestones achieved than corporate plans, especially in implementation (FCM & ICLEI, 2016). This may be as community-wide emissions are not directly controlled by the municipality, and require interaction with community stakeholders in order to establish effective policies and plans (FCM & ICLEI, 2016). Community-wide implementation also needs the support of provincial policy and the engagement of local utilities (FCM & ICLEI, 2016).

At the community level, a wide array of plans are developed to reduce community-wide GHGs, namely GHG reduction plans at 54%, official community plans, sustainable community plans, community energy plans, land use and sector-specific plans, and the least developed – neighbourhood renewal strategies (FCM & ICLEI, 2016). Complementary policies to support these plans mostly use a time horizon of 6-40 years (FCM & ICLEI, 2016). Some member municipalities prefer to create dedicated LAPs (Local Action Plans), while some members integrate required elements of the milestone program into other types of plans (FCM & ICLEI, 2016).

For the plans submitted in the past five years, about half are dedicated local action plans (FCM & ICLEI, 2016). Within community plans, the top three sectors most targeted for emissions reductions are residential, commercial, and transportation (FCM & ICLEI, 2016). In terms of implementation, non-governmental organizations (NGOs) are one of the top key partners as well as during plan development (FCM & ICLEI, 2016). In some plans, they act as consultants in the plan development process, managing and guiding it (FCM & ICLEI, 2016). Some other top implementation partners are utilities partners and regional governments, but missing from many local action plans are Indigenous groups (FCM & ICLEI, 2016).

2.5 Climate Change Governance

2.5.1 Global Multilevel Governance of Climate Change

Betsill and Bulkeley (2006) assert that only through taking a multilevel perspective on global environmental governance that social, economic, and political processes that shape global environmental governance can be fully understood (Betsill & Bulkeley, 2006). First, governance may be a broad term that involves processes that define collective goals with an objective to achieving those collective goals, where governments may not be the only or most important organization (Betsill & Bulkeley, 2006). The concept of multilevel governance has a focus on the relationships between tiers of government (vertical), and organized horizontal governance (Betsill & Bulkeley, 2006). In multilevel governance, decision-making is shared between organizations and institutions at varying levels of governance, which show how political authority and policy-making crosses traditional boundaries between sectors and regions (Betsill & Bulkeley, 2006). The concept of multilevel governance is not governance above a state, but governance that is beyond the state (Betsill & Bulkeley, 2006). This presents the idea that, although multilevel governance shows how some authority does not have to be bound by jurisdiction or only to government bodies, it does not overpower states.

The example that Betsill and Bulkeley (2006) examine is ICLEI's Cities for Climate Protection network. CCP is a global, local, state, and non-state network at the same time that can be used to explore global environmental governance (Betsill & Bulkeley, 2006). The CCP program is a broad network of actors that cannot be simply distinguished as state or non-state as it has many close links to various levels of government (Betsill & Bulkeley, 2006). The divide between state and non-state actors at various regional levels are blurred in the politics of climate change (Betsill & Bulkeley, 2006). Such a network, that is the CCP program, redistributes the political authority of climate mitigation vertically upwards to transnational networks, vertically downward to cities, and horizontally to non-state actors (Betsill & Bulkeley, 2006). The CCP program is an example of global multilevel governance of climate change where the roles of governmental and nongovernmental actors are

reorganized locally, nationally, and internationally; and is specifically a form of governance that runs beyond these state actors (Betsill & Bulkeley, 2006).

2.5.2 Urban Multilevel Governance of Climate Change

Municipal institutions are a part of systems of human and environmental interactions, political and economic paths, and public values that strongly influence the range of policy responses available to climate change and the probable successes (Burch, 2010a). In urban climate governance, a global study has shown that it is the local governments who hold the main leading role (66%) in urban climate change efforts, but that other private and civil society actors may also have key roles (Castan Broto & Bulkeley, 2013). In another global study of ICLEI municipalities, 63% of the cities reported to having one to five staff members with the core responsibility of climate planning; North American cities mainly reported to having only one staff member (Aylett, 2014). In the same study, cities in Canada, Australia, and New Zealand are less likely to respond that there are high levels of internal support within the local government (Aylett, 2014).

Partnerships are a key part of climate governance (Castan Broto & Bulkeley, 2013). Civil society and private actors can be capable partners in implementing municipal climate responses (Aylett, 2014); and local governments can facilitate actions building relationships with stakeholders, boost public participation and campaign to national governments for the cause (Betsill & Bulkeley, 2006). It is also suggested that urban climate governance is comprised of public and private actors at different levels (Bulkeley, 2010). For non-state actors, their significance are weighed by how much they can influence, facilitate, and alter the behavior of nation-states (Betsill & Bulkeley, 2006). In climate governance, one of Betsill and Bulkeley's (2007) findings is that governance can be dispersed in this context.

An article by Hughes (2015) examines urban climate adaptation planning, but suggests the relevance of a study outside of adaptation plans alone. Hughes found that one of the reasons that the network climate adaptation actors are becoming more complex is because of local governments' need for funding (2015). Additionally, although horizontal and

vertical partnerships are important for urban climate adaptation planning, it is not always the case that these partnerships prevail through to implementation, and that the implementation of climate change adaptation actions are many times project-based and ad-hoc (Hughes, 2015). Many municipalities have created strong cross-sector partnerships for designing and implementing climate change responses - but many have not, and if more municipalities were to be able to create these strong cross-sector partnerships, it would help to solve the issue of limited financial and human resources that local governments have for climate change (Aylett, 2014). In Aylett's (2014) international survey of ICLEI members, non-governmental organizations and community-based organizations are ranked as most supportive of climate policies and programs, and high in rank for being engaged in the design and implementation of climate mitigation policies and programs (Aylett, 2014). The survey (Aylett, 2014) further finds that since the private sector in general lacks engagement, and is in a more neutral position with the topic of climate change, this means that climate mitigation capacity and resources are yet to be maximized (Aylett, 2014).

2.5.3 Capacity for Implementation

Although municipalities may have many resources, it does not always translate into implementation, suggesting something else other than capacity that inhibits action (Burch, 2010a). These barriers may be classified into cultural or behavioral barriers, regulatory or legislative barriers, structural or operational barriers, and contextual barriers (Burch, 2010a). Cultural barriers deal with the relationships individuals within the municipality and their respective personalities, the relationships between the individuals and the collective culture (Burch, 2010a). Regulatory barriers concern the policy tools available to a municipality to use and interactions between tiers of government, such as policy conflicts (Burch, 2010a). Structural barriers concern the organization's structures and procedures that can impact daily operational activities and long-term policy direction (Burch, 2010a). Finally, contextual barriers relate to the environment where the municipality operates and where the public's values and priorities are (Burch, 2010a). These barriers are very intertwined, and the barriers can reinforce each other to create considerable momentum responsible for unsustainable patterns in how a municipality operates (Burch, 2010a).

However, the same factor that can constrain climate action can also facilitate it (Burch, 2010a). These interwoven barriers are a result of the underlying development path (Burch, 2010b). To transform the barriers into enablers of action, sources of path dependencies need to be identified, the development path needs to be challenged, and the new patterns of sustainable actions need to be institutionalized (Burch, 2010b). Moving towards sustainability is long-term, requiring existing socio-technical systems to change to sustainable means of production and consumption (Markard, Raven, & Truffer, 2012). Path dependencies of various sectors, such as water, energy supply, or transportation, contribute to sustainability challenges (Markard et al., 2012). Sustainability transition is very complex as there are diverse actors and interests involved (Markard et al., 2012); therefore, sustainability transition and sustainability challenges may be much more complex. Climate change has been an area of focus for municipal entrance to sustainability action (Clarke, 2014; ICLEI, 2012).

Community-based climate policies may be more likely to prompt shifts in the development path if they have a longer time horizon, realize the feedbacks and adaptability, employ integrated decision-making, and systems thinking (Burch, Shaw, Dale, & Robinson, 2014). Weaving climate policies with larger community sustainability goals could be helpful, along with a longer time horizon in the climate policies which support the understanding of how elements in a system interact and support monitoring timeframes (Burch et al., 2014). Depending on the context and local priorities, using a sustainability approach to frame climate change by recognizing the inherent relationships it has with broader community priorities, operations, and policies allow for increasing the scope of actions, build new partnerships, and identify tradeoffs and synergies (Shaw, Burch, Kristensen, Robinson, & Dale, 2014).

2.6 Cross-Sector Social Partnerships and Collaborative Strategic Management

2.6.1 Cross-Sector Social Partnerships

Social partnerships in the collaborative inter-organizational literature originated with business collaborations that lead to increased social responsibility as a means to a

competitive advantage (Selsky & Parker, 2005). Cross-sector social partnerships (CSSPs) can be defined as cross-sector projects created exclusively for the purposes of addressing social issues and continually and actively engages partners (Selsky & Parker, 2005). Cross-sector social partnerships can arise out of many disciplines such as business, healthcare, education, and even the natural environment (Selsky & Parker, 2005). Some instances of issues that cross-sector social partnerships address include education, health care, economic development, and poverty alleviation (Selsky & Parker, 2005). Some challenges to studying CSSPs are that they exist in a variety of sizes, purposes, time frames, voluntariness, and regional levels (Selsky & Parker, 2005). Selsky and Parker (2005) offer a few configurations of social partnerships in which they call 'arenas'. In arena 4, cross-sector social partners are tri-sector (businesses, government, and civil society) and focus on a regionally large-scale project that typically concentrates on social, economic, or environmental issues (Selsky & Parker, 2005). CSSPs have become an increasingly popular way in many fields and contexts as an innovative organization model to address complex and long-term social issues (Vurro, Dacin, & Perrini, 2010). In sustainable development, these CSSPs have led to the increase of collaborative community sustainability plans and vice versa (Clarke, 2011).

When reviewing cross-sector social partners, many of the field's researchers can almost unanimously concur that CSSPs can be looked at by chronological stages (Selsky & Parker, 2005). There are various models on stages proposed, differing in the number of stages, and names of the stages (Selsky & Parker, 2005). In the field of CSSPs, researchers can be said to study four distinct aspects. One aspect is the particular focus on partnership formation (Selsky & Parker, 2005). A second aspect where another group of researchers gravitates towards is cross-sector social partnership implementation activities, including structure, governance, leadership characteristics, and behavioural dynamics (relationship development, communication, and culture) (Selsky & Parker, 2005). The third concentration of researchers focuses on the outcomes of the partnerships, such as project outcomes, and intangible results (Selsky & Parker, 2005). Finally, a fourth group centers on factors that influence the partnership activities at more than one of the stages, such as power and trust (Selsky & Parker, 2005), which are mentioned above. Each stage, such as

implementation, will have their own set of factor issues, such as trust issues at various stages (Selsky & Parker, 2005).

Mentioned throughout the literature is the important role that municipalities play in climate change mitigation, and the important roles that community stakeholders play if community-wide emissions reductions are to be reached. This role was stressed at the UN Conference on Sustainable development in Rio de Janeiro in 1992, asking for local governments to form partnerships with community stakeholders to produce Local Agenda 21s to work towards sustainable development (Bulkeley & Betsill, 2005), and it was reiterated in the 2016 New Urban Agenda. With different sectors having a common vision, different thinking to solve the same issues, and incentivised by various goals, different approaches are likely to emerge (Selsky & Parker, 2005). Even though community stakeholders are important, local governments are still the main actors for implementation coordination within the partners, and mobilizing community engagement with established policies and programs (Bulkeley & Betsill, 2005). Huxham and Vangen (2000), suggest that current public sector management will need a formal understanding of the skills, processes, structures, and tools required for working inter-organizationally. A partnership approach (collaborative approach) is a strategic management process that includes partners in plan formation, implementation, and decision-making (Clarke & Fuller, 2010; Clarke & Erfan, 2007; Clarke, 2014). The practice that public sector management may make decisions in representation of the public is no longer recognized, as community stakeholders are seen to exercise their rights to influence project implementation (Selin & Chevez, 1995), making partnership approaches ever more important.

Besides the recognized benefits to cross-sector social partnerships, Koschmann, Kuhn, and Pfarrer (2012) add that CSSPs are not only valuable in connecting stakeholders and interested groups, but also valuable for each partner to be able to reach out to people and capital that only individual partners can access, and to be able to influence the issues in distinct ways specific to each partner. There are drawbacks to the partnership model. Clarke and Erfan (2007) note that creating a relationship from the start and maintaining the relationship throughout implementation requires time commitment from the partners.

Every collaboration has its own unique features, not allowing a universal formula for partnership models (Clarke & Erfan, 2007).

2.6.2 Collaborative Strategic Management Process

As large societal issues become more difficult to solve alone to achieve needed outcomes, there has been an increase in collaborative problem-solving in various sectors (Selin & Chevez, 1995). In this approach to problem-solving, collaboration entails collective decision-making, and collective responsibility for actions between stakeholders (Selin & Chevez, 1995). Instead of collaboration being a fixed, organized state, it can be seen as an ongoing process (Selin & Chevez, 1995). Collaboration models, such as those proposed by Selin and Chevez (1995), are seen as models that illustrate the collaboration under ideal circumstances, that may be weakened by internal and external barriers to collaboration. Quite typically, collaboration processes begin with environmental antecedents, moving to problem setting, direction setting, and structuring; and finally, outcomes and feedback arrows illustrate the dynamic and circularity of collaboration (Selin & Chevez, 1995).

With the widely applicable and useful nature of collaboration processes, they have evidently become used in different sectors globally in at least the past two decades (Selsky & Parker, 2005). Cross-sector social partnerships have also become the new organizational means by which to tackle social issues, causing interest in research on the requirements for successful CSSP implementation (Vurro et al., 2010). However, cross-sector collaborations do not always succeed in solving all problems they set out to solve (Bryson, Crosby, & Stone, 2006). There have been cases where issues have been solved poorly, and what was meant as solutions only created more problems (Bryson et al., 2006). Both collaboration and cross-sector collaboration is not a one-size-fits-all solution because of the complex, interconnected relationships, and changes along the process can cause unexpected effects in the system (Bryson et al., 2006).

In the literature, there are numerous collaborative management process models, such as those of Selin and Chevez (1995). In addition, the same terminology may also differ slightly, even though being in the same field of study. The collaborative strategic management

process focused on in this research will be from Clarke and Fuller (2010). This model extends previous models by integrating two levels of implementation at the organizational and collaboration levels and adds different outcome types and feedback loops (Clarke & Fuller, 2010).

In Clarke and Fuller's (2010) process model of collaborative strategic management are the following elements:

- A context – describing "the situational considerations and partnership formation is the initial partners, their initial form, and their initial communication, and decision-making processes" (Clarke & Fuller, 2010, p.90).
- Collaborative strategic plan formulation – "strategic plan development by the partnership (for the partnership) and the plan's content" (Clarke & Fuller, 2010, p.90).
- Deliberate and emergent collaborative plan implementation by the partnership – "actions taken by the partnership to further the collaborative strategic plan goals" (Clarke & Fuller, 2010, p.90).
- Deliberate and emergent collaborative plan implementation per organization – "actions taken by the individual partners within their own organizations to further the collaborative strategic plan goals" (Clarke & Fuller, 2010, p.90).
- Realized collaborative plan implementation outcomes – "are the results – plan, process, partner, person, outside stakeholder, and environment-centric outcomes" (Clarke & Fuller, 2010, p.90).
- Changes in the domain – "changes that occur in the social problem domain that are outside the actions taken by the individual partner organizations or the partnership, yet have an impact on the collaborative plan implementation outcomes and/or other stages of the process model" (Clarke & Fuller, 2010, p.90).

Bryson et al., (2006) also credit that many collaboration academics noticeably identify that context affects structure, such as when government policy changes affect available resources, rearranging structural ties of partners. At all stages of the collaboration, trust,

commitment, collaboration, understanding, and outcomes, are all important (Ansell & Gash, 2008).

2.6.3 Collaborative Community Sustainability Strategies

Recently in Canada, an increasing number of community sustainability strategic plans have been formulated, thanks to The New Deals for Cities initiative where provincial governments can access federal money from gas taxation for various infrastructural developments provided the local government create a long-term integrated community sustainability plan (Clarke, 2014). There are broad differences in how the strategic plans are formulated (Clarke, 2014). According to Clarke and Fuller (2010), collaborative strategy is "the joint determination of the vision and long-term collaborative goals for addressing a given social problem, along with the adoption of both organizational and collective courses of action and the allocation of resources to carry out these courses of action" (p.2). Social challenges, in inter-organizational collaboration literature, are issues that are beyond the capacity of one organization, and these social issues are usually not well defined nor institutionalized (Selsky & Parker, 2010).

Community sustainability plans at the community level may include social, environmental and economic foci (such as green economy, and natural resource use) (Clarke, 2014). Community sustainability plans have specific characteristics which include involving a large number of cross-sector partners, are long-term in vision, and begin with collaborative strategic plan formulation that has formulation and implementation stages (Clarke, 2014). Many local governments continue to follow Local Agenda 21s, which are synonymous with community sustainability plans and integrated community sustainability plans, whereas many other local governments have also chosen to concentrate on climate change or biodiversity planning as their entrance into full-fledged sustainable development (Clarke, 2014; ICLEI, 2012).

2.6.4 Key Structural Features for Implementation Through Large Partnerships

Generally, within organizational theory, structure is a well-developed concept, encompassing parts such as goals, division of labor, specializations, rules, and

predetermined authorities in the relationship (Bryson et al., 2006). Within collaboration, however, structure has comparatively been overlooked (Bryson et al., 2006). When collaborations require sustained partner commitment to the collaboration, there needs to be structuring – a way to manage stakeholder interactions systematically (Selin & Chevez, 1995). This requires institutionalizing the collective meaning of the partnership and creating a regulatory framework to direct future collaborative implementation (Selin & Chevez, 1995). Although structuring is for ensuring an agreed upon order to manage stakeholder interactions, structuring is conceptualized as a dynamic process (Selin & Chevez, 1995). Structuring can include formalizing relationships, role delegation, detailing tasks, formulating monitoring and control systems (Selin & Chevez, 1995).

Collaboration structures are also in part dictated by the external context (Bryson et al., 2006; Clarke & Fuller, 2010), such as when government policy changes take place, affecting available resources for problem-solving and restructuring the structural ties of the partners in the collaboration (Bryson et al., 2006). Additionally, collaboration structures can be dynamic due to the complexity and uncertain nature of collaboration, where complexity derives from factors such as changes in membership and partners (Bryson et al., 2006).

Implementation structures (i.e., structures in place that help to facilitate the implementation process) have been known to affect partner engagement and resultant outcomes (Clarke, 2014). Structures are composed of processes, form(s), and partners; and many variances of structural differences can take place during implementation (Clarke & Erfan, 2007). In Clarke (2011), the question of which structural features are important for enabling plan outcomes were explored. Clarke (2011) identified that partner engagement, partnership and partner level implementation, presence of communication system, presence of monitoring system, and collaborative oversight are important for achieving plan outcomes, as determined from studying case communities. This is also applicable to GHG emissions plan outcomes and air quality plan outcomes (Clarke, 2011).

These structural features are tied to the larger implementation structure of the initiative, and they are also interrelated (Clarke, 2011). For example, if an oversight body did not exist, monitoring and strategic plan renewal would not be possible (Clarke, 2011). If organizations were not engaged, it would not be possible to have them implement within their organizations (Clarke, 2011). If the final goal is to achieve the plan outcomes of the community sustainability plan, it is not enough to have only one or two of these structures (Clarke, 2011).

Below is a further review of each of the five important implementation structures:

2.6.4.1 Communication System

Communication and information systems have broadly allowed the exchange and awareness of international and local social issues (Selsky & Parker, 2005), enabling beliefs that government, non-profits, and businesses should be responsible for addressing these social issues (Selsky & Parker, 2010). In general, communication essential for engagement is initiated through the interactions of individuals and organizations within a network (Calder & Beckie, 2011). An implementation structure required for successful implementation is the presence of a communication system (Clarke, 2011, 2014). Communication activities can be designed to allow networking between partner organizations and to reach community members (Clarke, 2012). Communication activities can also be used to commend progress, engage partners, and disseminate best practices (Clarke, 2012). If a communications framework was absent, partners may become disengaged, causing the program and initiatives' value to be questionable to council and community members (Clarke, 2012). Koschmann et al., (2012) developed a framework for comprehending cross-sector social partnerships through communication processes and for illustrating how partnership value can be maximized and realized from communication activities. They found that communication has the ability to maintain complex organizational forms, like that of a cross-sector social partnership, and demonstrate value through collective agency (Koschmann et al., 2012).

2.6.4.2 Monitoring System

A monitoring system is another implementation structure essential to the successful implementation of a community sustainability plan. A monitoring system enables adjustments during the implementation stage and for plan renewal as required (Clarke, 2012).

2.6.4.3 Individual Partners Implementing

For successful implementation of a community sustainability plan, individual partners within the partnership must do their own part in implementing the sustainable community plan. Organizations must also be enabled to implement the community sustainability plan (Clarke, 2012). In individual implementation, partners need to go beyond endorsing or advising on the community sustainability plan, but to act within their own organizations and report on their actions and progress in order to accomplish community-wide goals (Clarke, 2012). With each partner implementing, sustainable development can happen outside of governmental jurisdiction alone (Clarke, 2012). During the implementation by individual organizations, tasks are more specific-to the organization while within the ability of the organization to implement (Clarke & Fuller, 2010).

2.6.4.4 Engages Key Partners

A necessary implementation structure for sustainable community plans is that it engages key partners. Key organizations in various sectors need to be engaged, and there needs to be a method to perpetually add partners to the implementation of a community sustainability plan (Clarke, 2012). Actions by the local government are important, but implementation by other stakeholders is also crucial. Clarke (2012) asserts the need to involve the right amount of the right partners during implementation (e.g., in reducing community-wide GHGs, the major GHG emitters in the community should be involved in the implementation to make a difference in achieving community-wide emission targets (Clarke, 2012). This implementation structure involves both identifying the partners and also engaging them (Clarke, 2012). Again, the engagement of a wide variety of stakeholders is crucial for the success of sustainable development. An aggressive goal requires a sense of ownership from the community as well as significant commitment (Clarke & Erfan, 2007).

Clarke and Erfan (2007) detailed two models for stakeholder engagement, one is participation, where stakeholders are encouraged by the municipality to provide input to the sustainable community plan. Another approach is the partnership model of stakeholder engagement, used for sustainable development, where stakeholders do more than provide input and actually collaborate on planning, decision-making, and acting for common goals and visions (Clarke & Erfan, 2007). The partnership model involves stakeholders significantly more than the participatory approach.

2.6.4.5 Collaborative Oversight Body

In recent years, a new governance format has sprung to take the place of "adversarial and managerial modes of policy making and implementation" (Ansell & Gash, 2008, p.543). This relatively new governance format is collaborative governance, which connects public and private stakeholders together with public authorities to interact in census-oriented decision-making (Ansell & Gash, 2008). Ansell and Gash (2008) offer a definition of collaborative governance as, "A governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets" (Ansell & Gash, 2008, p.544).

Similarly, the successful implementation of a community sustainability plan needs a multi-organizational party to oversee the implementation process while giving short-term directions for action, such as fund allocation and staffing assignments (Clarke, 2012). This collaborative oversight body should have a secretariat to coordinate the process, a body to make decisions and oversee the implementation processes, and include members of the municipal council as well as other partner representatives (Clarke, 2012).

2.7 Outcomes of Collaborative Strategic Management Process

Collaboration outcomes may include benefits, impacts, and programs (Selin & Chevez, 1995). In the cyclical process of collaboration, outcomes are shown next to the implementation of the partners and partnership (Selin & Chevez, 1995). Outcomes are assessed, then partners reflect on their interests in continuing any of their collaborative relationships (Selin & Chevez, 1995). Often in natural resources management, however, once plan outcomes have been achieved, the collaborating group disbands (Selin & Chevez, 1995). There are instances of genuine and desirable collaboration outcomes, but instances of the collaboration having slow or no progress are common (Huxham & Vangen, 2000). This is what Huxham and Vangen (2000) term *collaborative inertia*, which is the opposite of *collaborative advantage* (i.e., achieving outcomes only possible with collaborating).

Within trisector collaboration research, a constant challenge is determining what counts as an outcome since it will be different for each of the sectors (i.e., government, civil society, and corporate) (Selsky & Parker, 2005). According to Selsky and Parker, (2005), many collaboration studies categorize outcomes as tangible outcomes and intangible outcomes. While cross-sector social partnerships in "arena 4" (trisector) are regarded as more promising, many authors think that complex goals and projects are not plausible (Selsky & Parker, 2005).

In collaborations where partnerships are dynamic, partners may only see or realize indirect benefits of the collaboration, since the direct benefits (or plan outcomes) of the implementation may only be noticeable in the long term (Selsky & Parker, 2005). Furthermore, research has also shown that trisector partnerships may result in mixed outcomes, exemplified by environmental partnerships sometimes resulting in solving intended issues, whereas others only worsen the problem (Selsky & Parker, 2005). It is also observed that trisector projects can have counterproductive results because solving public and social issues through cross-sector collaborations may lend power to corporate interests (Selsky & Parker, 2005).

Overall, from Clarke's (2014) study, results demonstrate that if partnerships are to be thought of as an avenue by which to involve responsible businesses in sustainable development in the community, or community level social issues, then continuing implementation structure is an important concept. This is especially valid for cross-sector social partnerships that intend on achieving collaborative goals, CSSPs that tackle complex issues with long term partnership commitments, or CSSPs involving many organizations. Methods used to measure outcomes from cross-sector social partnerships are only in the preliminary stages of research (Selsky & Parker, 2005). In current CSSP literature, one way to measure the value of a partnership is to see whether it helps partners to achieve their goals (Koschmann et al., 2012).

Clarke and Fuller (2010) describe six types of outcomes that can result from the collaborative strategic management process. Two types of outcomes, plan-centric outcomes and partner-centric outcomes are reviewed below.

2.7.1 Plan-Centric Outcomes

Bryson et al. posit that the point of creating and maintaining cross-sector partnerships should be for making public the value that cannot be achieved by individual organizations alone (2006), and for creating positive social change (Koschmann et al., 2012; Seitanidi, Koufopoulos, & Palmer, 2010). This ability to create greater public value and change comes from member partners' collective agency (Koschmann et al., 2012). CSSPs are more inclined to create this public value when they build their stakeholders' self-interests and on different sectors' distinct strengths while minimizing each other's weaknesses (Bryson et al., 2006). The final stage of collaborative plan implementation is also the outcomes. This final stage arises from actions done by individual partners and by the partnership as a whole (Clarke & Fuller, 2010). Plan outcomes are the background issues for why the collaboration had initially been formed and can be found in the strategic plan (Clarke & Fuller, 2010). The main goal of climate action plans is to reduce emissions at the community level. When assessing if the community is progressing in its plan outcome, the trend within each region itself is most important (Clarke, 2011). In Clarke's (2011) study,

Whistler and Greater Vancouver (Canada) have been progressing towards their plan outcomes since the trends are in the direction of their collaborative goals.

2.7.2 Partner-Centric Outcomes

Partner-centric outcomes are outcomes that partners experience from the collaboration (Clarke & Fuller, 2010; Clarke & MacDonald, 2016). Much of the literature on inter-organizational learning from collaboration and the benefits that arise has been centered on business partnerships, while knowledge in this area is even narrower for private-public partnerships (Arya & Salk, 2006). On the academic side, the literature is limited; and on the practical side, firms can vary in their ability to realize the value of new information and capacities, how to use this new information and capacities, and how much of which is absorbed (i.e., organizational learning) (Arya & Salk, 2006).

Outcomes for businesses that are helping to solve social issues may not be apparent, but outcomes for businesses that can increase competitive advantage include community building to mitigate future local issues, recognition in the community, reducing the chance of bad publicity, and making the company more attractive to potential employees (Selsky & Parker, 2005). Briefly navigating away from the local level, outcomes of CSSPs can be so attractive that they may even attract multinational corporations to voluntarily adopt or develop codes of conduct that will make the company act in an informed way (Arya & Salk, 2006).

In cross-sector social partnerships, benefits can be realized by individuals, organizations, various sectors, and by society (Selsky & Parker, 2010). There are many opportunities for community stakeholders to increase their innovation capacities to maximize the effects of co-benefits (Puppim De Oliveira et al., 2013). One way to help achieve outcomes and mutually beneficial results from the collaboration is for the issues and opportunities to be clearly defined (Arya & Salk, 2006).

Entering into this research project, partner outcomes studied are physical capital (cost savings and increased capacity), human capital (knowledge or learning), and

organizational capital (e.g., innovation, relationships, reputation, new markets and resources, and sustainability programs), from the larger project (Clarke & MacDonald, 2016). When addressing a common issue, partners watching each other approach the same problem in a multitude of ways is one way new knowledge is created (Selsky & Parker, 2010). However, there are also gaps in the literature on partner outcomes considering different sectors, such as monetary and nonmonetary outcomes to non-profit organizations from collaboration (Arya & Lin, 2007). Linking to implementation structure, Clarke (2014) found that rather than organizational types influencing partner experience, it was due to implementation structures, making the research of structures more relevant.

2.8 Literature Conclusion

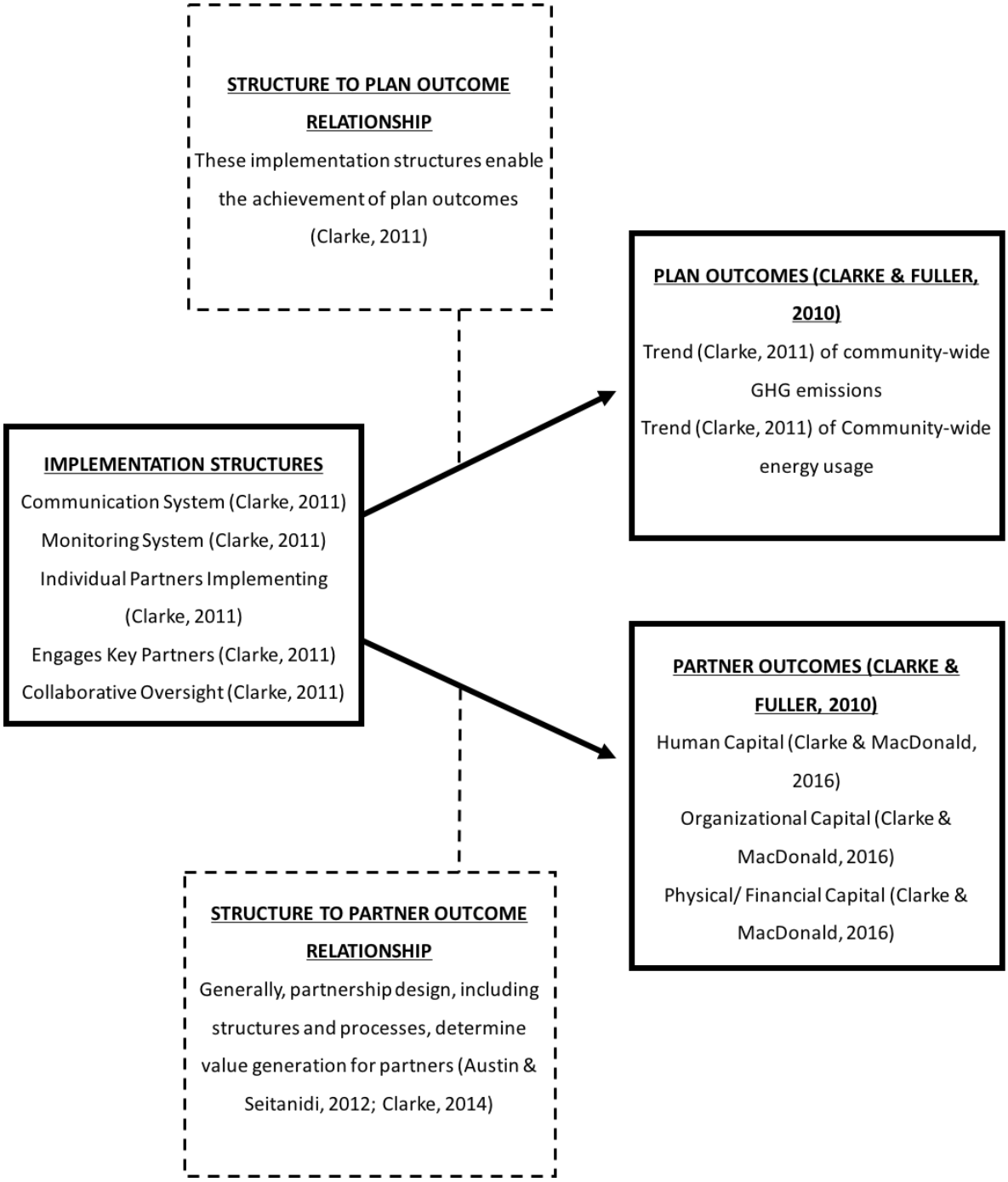
Through examining the literature, it was found that collaborative strategic management can have uncertainties. Contexts of the collaborative management process can render many uncertainties to a partnership, and some partnerships can aggravate further the issues they wish to solve. Even though the literature reveals cautionary observations about climate change mitigation and cross-sector collaborations, most of the research shows that cross-sector social partnerships and the collaborative strategic management process are powerful and worthwhile tools through which to address climate change and, ultimately, sustainable development. Implementation structures affect what outcomes can be achieved (Clarke, 2011), and an issue is how local governments can effectively implement collaborative community sustainability strategies through sound implementation structures that enable reaching desired outcomes (Clarke, 2014). Therefore, research on implementation structures and outcomes of community climate action plans are important. Figure 1 below shows the components being studied and the relationships that are being explored.

The theoretical structure chosen, as seen in Figure 1 below, was created from a review of the literature. Particularly, the implementation and outcome process was informed by the collaborative strategic management process of Clarke and Fuller (2010). The components of the structures were also informed by the literature as seen from the sources beside each

of the elements. As such, the holistic background, as well as details behind the theoretical structure are found in the respective sections within the literature review chapter as Figure 1 is both an overview and a guide.

However, in using the theoretical structure, as it is part of the collaborative strategic management process, is the requirement that the partnership formulates a collaborative strategic plan (Clarke & Fuller, 2010). In this context, communities that have formulated community-wide climate change and energy plans are examined. Additionally it is also unknown whether findings may be applicable outside of social partnerships in different contexts other than municipal ones (Clarke & Fuller, 2010). Finally, the theoretical structure may not be able to include specific elements within each implementation structure as there are various types of elements that may make up a structure. Another point is that for partner outcomes, while there are various types of capital, specific outcomes may not be included in a more generalized theoretical structure.

Figure 1 - Components of Research



CHAPTER 3: METHODS

3.1 Introduction to Methodology

The following chapter covers the methodology of this research study. To study the aspects of interest and relationship between collaborative implementation structures and outcomes from implementing community climate action plans in Canada, the study was conducted using a qualitative multi-case study approach. Due to the nature of the research question in aiming to identify a causal relationship, appropriate case study methods that support exploring a causal relationship were used.

For the above approach, this chapter commences by documenting the research design, the criteria for case study selection, and the data collection and analysis. This is followed by limitations and control of the chosen method as well as reliability and validity of the study.

3.2 Research Design

The strategy of inquiry employed for studying the implementation of four municipal climate action plans in relation to plan and partner outcomes takes a qualitative approach. Based on the setting of the research, the researcher's role, the sources of data to be collected, the emergent property, and the holistic property of the question being asked, a qualitative approach is the most fitting (Creswell, 2014).

Within a qualitative approach, one qualitative research design is the case study. Typically used for evaluative purposes where a detailed analysis of a case (such as programs, activities, or processes) is developed by the researcher (Creswell, 2014), this is suitable for analyzing several climate change action plans in various Canadian communities. Not only are cases limited by time and activity, the researcher can also collect detailed information using various data collection procedures over time (Creswell, 2014). Even though case studies have been traditionally used for process evaluations, case studies has now been

proven through application to be suitable in analyzing outcomes of interventions (Yin, 2011), both uses employed by this research study.

The partner organization engaged in data collection is ICLEI – Local Governments for Sustainability. Specifically, the partner for this project is ICLEI Canada. ICLEI is an association of local governments whose mission is "to build and serve a worldwide movement of local and regional governments that are committed to achieving tangible improvements in environmental sustainability" (ICLEI – Canada, n.d.a, p.1). ICLEI's work that is relevant to this research study includes developing action plans toward measurable sustainability targets (including climate action plans), meeting targets through implementation, and evaluating progress for sustainable development (ICLEI – Canada, n.d.-a).

3.3 Case Study Selection

The following section presents the criteria for which the case study locations were selected, followed by the rationale for choosing each criterion. When conducting case study research, there should be a set of operational criteria (Yin, 2014) to select the cases. Since this is a multi-case study, the criteria should be fitting for the research question (Yin, 2014). The communities chosen for multi cross-case study analysis were District of Saanich (British Columbia), City of Guelph (Ontario), City of North Vancouver (British Columbia), and the City of London (Ontario). They were chosen based on the following criteria:

1. The chosen site must be a community in the country of Canada.
2. The community is a member of the “Partners for Climate Protection” program.
3. The community must have achieved Milestone 5 in the community stream of the PCP program by July 2016.
4. The community’s available data and resources must be available in English.
5. The municipality’s population is not in the top 10 in Canada (Statistics Canada, n.d.).
6. The plan must have adopted a GHG emissions target year that extends beyond the current year (2016).

7. The community must have a current climate action plan or energy plan that is part of the PCP program, or a plan developed after achievement of Milestone 5 of the program.
8. There must be a community-wide plan to reduce GHGs that is a dedicated GHG action plan or energy plan, and not solely part of a sustainable community plan or equivalent.
9. The implementation of the plan must include 10 partners or more.
10. The community must be implementing the plan in the most recent year.
11. The community must be available for information validation the week of July 18, 2016.
12. The community must be willing and able to provide relevant data for the study.

The first criterion is related to the geographical limitations of where the research is concerned and conducted. Thus, chosen communities must be in Canada. Criterion 2 considers the partnership with ICLEI Canada. The community must be a member of the Partners for Climate Protection Program. When a municipality is a part of that program, the reporting relationship that they have with ICLEI Canada regarding the goals and progress of the action plan will ensure accessible information. Internal documents at ICLEI Canada may help to streamline data collection. Criterion 3 was used as some structures are inherent by choosing Milestone 5 municipalities in the community stream of the PCP program. For example, communities in the community stream of the program must engage community partners, and achieving Milestone 5 ensures that they have monitored, or are monitoring, progress.

Canada has two official languages - English and French. For criterion 4, as the researcher is limited to carrying out this study only in English, the community's data and resources must be available in English. In addition, the municipality's population should not be in the top 10 in Canada (criterion 5). This is based on the most recent available Statistics Canada population list for municipalities at the time of the study - "Population and Dwelling Counts Highlight Tables, 2011 Census". ICLEI Canada has identified that smaller municipalities tend to utilize the PCP program network and resources to a greater extent. ICLEI Canada

has also identified that there is no set definition of the concept of a large municipality; and it is generally accepted that it is the municipalities with the top 10 populations that are considered large.

Criteria 6 and 10 help to ensure a meaningful and current investigation of climate action plans. Only communities with a plan that has been recently implemented during at least the last year, with a GHG target year that extends to at least this year (2016), were chosen. Also, communities with longer implementation experience have richer data and insight since climate action plans entail long-term commitment.

Criteria 7 and 8 require that these communities have a current community-wide plan that is not part of a community sustainability plan or equivalent, as this is the original context which inspired the qualitative study in this new context. This study aims to consider community climate action plans (or energy plans) as standalone plans.

Criterion 9 requires the plan to include 10 or more implementation partners which is approximately the minimum number in a 'large' partnership. This was determined through initial screening interviews. However, due to the loosely defined concept of implementation partners, after deeper discussion, this study resulted in examining core implementation partners.

Next, a community staff must be available to validate details of the community plan and implementation details during the long list screening week of July 18 (Criterion 11). There was only one community that was not available after contact attempts. Finally, the community was only featured as a case study in the research if they were willing to participate and provide relevant data for the study. This was determined by making contact attempts with a municipal staff knowledgeable about the community's plan to inform them of the details of participation, and to confirm willingness and ability (Criterion 12). All contacted communities agreed to participate.

3.4 Data Collection

Of the six types of evidence that are typically gathered in case study development in case study research (Yin, 2014), three types that were applicable were collected, namely archival records, documents, and information from informant interviews. Data collection was undertaken in a partnership with ICLEI Canada.

They are a very fitting partner for this study and data collection because, not only do they have more than 30 years of professional development in the municipal realm, their services include energy and greenhouse gas management and climate change adaptation and mitigation (ICLEI Canada, n.d.-a). Most importantly, ICLEI Canada, in partnership with the Federation of Canadian Municipalities, are the organizers of *The Partners for Climate Protection (PCP)* program, which is a hub for local Canadian governments that are committed to taking action to reduce GHGs systematically (ICLEI Canada, n.d.-b). This PCP program is the Canadian component of ICLEI's *Cities for Climate Protection* campaign, which operates globally with over a thousand committed local governments (ICLEI Canada, n.d.-b). Annually, ICLEI and FCM request that members submit reports on their undertakings to reduce GHGs, and that ICLEI document information such as implementation costs, energy cost savings, and associated GHG reductions (ICLEI Canada, n.d.-b). One large advantage of developing a research partnership with the organizers of the PCP program is the amount of pre-existing and available official municipal data with the reporting and communication mechanisms in place. Additionally, a partnership with ICLEI allows for research dissemination to appropriate communities. The larger research project is also being conducted with ICLEI. Data collection occurred from June 2016 to October 2016.

Data Collection for In-Depth Municipal Cases:

1. Obtained confirmation regarding the necessity of ethics clearance. It was determined that it was not required.

2. Researched possible communities by gathering necessary information to narrow down communities against criteria through archival information and screening interviews.
3. Communities that fit pre-determined case study criteria were selected (appendix A).
4. Data relevant for each of the four community's implementation structures and plan-centric outcomes were collected from archival sources (ICLEI's collection, and/or publicly available).
5. Simultaneously with the step above, as much data as possible for each community's implementation structure and plan-centric outcomes were collected from document sources (ICLEI's collection, and/ or publicly available).
6. Remaining required information was determined.
7. Informant interviews with each municipal staff were used to collect needed information by:
    a. Drafting initial contact e-mail (Appendix B), information letter and consent form (Appendix C), and interviewing questions (Appendix D).
    b. Connecting with prospective informants via e-mail or phone.
    c. Consent form, description of study, and interviewing questions were e-mailed to participants.
    d. Informational interview was conducted with willing informants via telephone (30 minutes or more for key informants). These were recorded.
    e. Recorded interviews were transcribed as soon as possible.
    f. A thank-you e-mail was sent to each participant (Appendix E).

(Based on UCLA Center for Health Policy Research, n.d.)

Data Collection for Partner Organizations

For data collection from partner organizations, procedures were similar to those of key informants. However, no criteria were used to select partner organizations to contact as all partner organizations were contacted and invited to participate.

1. Drafting initial outreach phone call and contact e-mail (Appendix F and G), interviewing questions (Appendix H) and information letter and consent form (Appendix I).
2. Searched contact information of municipal implementation partner if necessary. Most were provided by the municipal staff person.
3. Connecting with prospective informants via e-mail or phone.
4. Consent form, description of study, and interviewing questions were e-mailed to participants.
5. Informational interview was conducted with willing informants via telephone and recorded.
6. Recorded interviews were transcribed as soon as possible.
7. Thank you email was sent to participants (Appendix J).

3.5 Data Analysis

Upon completion of data collection, the following steps were taken to analyze the data:

Handling of Data and Building of Individual Cases

1. Interviews were transcribed as soon as possible after each interview.
2. Municipal staff interviews were deductively coded against existing variables, and then inductively coded for more variables (Thomas, 2006).
3. Tables were created with the reduced information (Thomas, 2006) for each case and inserted into case write-ups.
4. Steps 2 and 3 were repeated for partner interviews.

Cross-Case Analysis

1. A cross-case comparison matrix was conducted using a process-outcomes matrix to see if any patterns emerged (Averill, 2002) between partnership-level variables (structures, and plan outcomes) and partner-level variables (figure 1).
2. Cross-case conclusions were drawn.
3. Case-community overviews and summaries were written.

4. Prepared practical report for ICLEI Canada that includes a research summary, and main recommendations, as well as determined useful lessons.
5. Implementation structure findings were compared to previous findings from the larger project on community sustainability plans (literature on large cross-sector partnerships), to validate findings and to see if any new findings in the new context.
6. Partner outcome findings were compared to partner outcome findings from the larger project on community sustainability plan partnerships to validate previous research and to see if there were any new findings in the new context.

The table below shows the number of interviews for each municipality.

Table 1 - Interview Counts and Organization Types

Organization Type	Saanich	Guelph	North Vancouver	London
Government	3	1	2	1
Business	2*	2^	1*	1^
Business Association	0	0	0	1
Non-Profit/ Non-Governmental organization	2	2	1	0
Total Interviews	7	5	4	3

Note:

^: Denotes one common partner counted between Guelph and London. Responses in the thesis are confirmed to be applicable to both case study cities.

*: Denotes one common partner counted between Saanich and North Vancouver. Responses in the thesis are confirmed to be applicable to both case study cities.

- If partners interviewed include organizations such as regional and provincial governments, government counts are greater than 1.

Below are the participants who contributed to this research:

List of Participants

Anonymous		
Amanda Broad	Climate Action Program Coordinator (Acting)	Capital Regional District
Ben Finkelstein	Manager, Communities and Built Environment	BC Ministry of Environment
Caroline Jackson	Section Manager, Environmental Sustainability	City of North Vancouver
Charlotte Argue	Program Manager, Climate Change and Air Quality Program	Fraser Basin Council
Derek Satnik	Vice President, Technology	s2e Technologies Inc.
Elizabeth Sheehan	Co-founder, President	Climate Smart Businesses
Evan Ferrari	Executive Director	eMERGE Guelph
Igor Mozetic	Manager, Commercial and Industrial Sales	Union Gas
Jamie Skimming	Manager, Air Quality	City of London
Jason Emmert	Air Quality Planner	Metro Vancouver
Jerry Lacina	National Accounts Manager C/I Equipment Distributors	Union Gas
Mark Boysen	Sustainability Coordinator	District of Saanich
Richard Laszlo	Director, Research and Strategic Initiatives	QUEST
Robert Kerr	Manager, Community Energy	City of Guelph
Robyn Wark	Team Lead, Sustainable Communities	BC Hydro
Sabinah Rafiq	Program Manager, Climate Change Showdown	BC Sustainable Energy Association
Tom Hackney	Policy Director	BC Sustainable Energy Association

3.6 Limitations and Control

The following are limitations of the chosen methodology itself, and the limitations of the methodology-related decisions, as well as the researcher's effort to minimize the effects of the limitations. Limitations of the overall study are addressed in Chapter 6.

Method Limitations and Control

Contemporary case study research is not without its criticisms. Case study research has been scrutinized for its lack of rigor, biases, and generalization (Yin, 2014). In short, rigor and biases can be countered by incorporating more systematic procedures (Yin, 2011), whereas generalizations can be countered by the researcher being careful about the types of generalizations that are made in cross-case conclusions (Yin, 2014).

In the case of lack of rigor, the case study research was scrutinized for the researcher's sloppiness, for not following systematic procedures, and for using ambiguous evidence directionally, all of which could be attributed to a small number of methodological texts for case study research (Yin, 2014). By using logical steps to document research methodology in a systematic fashion, and using an authoritative case study research text to guide throughout the design, these measures help to ensure rigor.

For scrutiny of biases, partnering with ICLEI Canada throughout the process, and engaging their professionalism, guidance, and resources, helped to minimize researcher bias.

For criticisms of generalizability, the researcher must ensure that cross-case conclusions only draw generalizations towards theoretical propositions and not to populations (Yin, 2014). The end goal is to generalize theories (analytical generalizations), and not to use case studies to generate probabilities (Yin, 2014). Case studies in this research study aim to feed back into the cross-sector social partnership literature.

There are some biases from the criteria. By choosing municipalities that have achieved Milestone 5 and are ongoing in their implementation, what other member municipalities may be doing who have not yet achieved Milestone 5 but may still be implementing, is not examined. There may be municipalities who have not applied for milestone achievements yet may already be satisfying Milestone 5 requirements. This may have allowed for communities in other provinces to be studied. This is similar to solely assessing only member municipalities of the PCP program. Having these criteria would limit the initial pool of case communities to have selected from. Also, municipalities within networks are varying in their attributes including population and socioeconomic character (Gore, 2010), which means generalizability to other municipalities is a limitation.

Also, there are limitations to having chosen the particular theoretical structure as expressed in figure 1. It largely confines to exploring structures that were determined to be the enabling implementation structures in implementing community sustainability plans. For the partner outcomes, it was less limiting, as a new outcome was found. For the

implementation structures, it may be limiting to exploring those structures that were previously found. However, it still allowed for seeing that it is municipal oversight used in implementation rather than collaborative oversight.

It is also unsure whether the findings may be applicable to other municipalities who are using other types of plans that are also assessed in the PCP program. However, as the other plan types should set a target for GHG emissions, and if the plan is a community-wide plan, it may be possible for it to be applicable since there is a target for community-wide GHG levels, which means the outcomes are comparable.

Finally, feedback loops are not examined, only considering the relationships that are in the direction of the arrows. This means that some feedback relationships are not considered. Feedbacks can also be a further study as this study concentrated on structures to outcomes solely.

3.7 Reliability and Validity

Reliability - One test of quality research is reliability, which deals with the repeatability of the research. In order to ensure reliability, the researcher has documented the research process in enough detail so that it is repeatable. The researcher also used a case study protocol, and development of a case study database (Yin, 2014). The protocol includes how data was collected, which includes research tools such as interview questions (Yin, 2014). The database contains the transcripts, documents, and archival information used (Yin, 2014).

Construct Validity - In ensuring construct validity, which is identifying correct operational measures for concepts studied (Yin, 2014), the researcher uses multiple sources of evidence (Yin, 2014), during data collection, that encourages convergent lines of inquiry (Yin, 2014). As mentioned in the data collection section in 3.4, archival data, documents, and informant interview techniques were employed. This helped to strengthen findings and consistency through convergence where possible.

Internal Validity - Internal validity concerns studies that aim to make a causal claim. There are various threats that are possible in a study which undermines internal validity, which were identified and minimized early in the research process (Creswell, 2014). Additionally, a strength of the present study is that it is using known causal relationships as demonstrated by scholars in previous studies in the literature review (Chapter 2).

External Validity - External validity concerns the generalizations that can be made outside of the research study. To ensure external validity, care is taken to make generalizations back to the theories on which the research is based. Also, there are no generalizations which suggest a probability of sorts (Yin, 2014). As well, the applicability of the results to communities outside of those that meet the criteria chosen for this study, and to those that are not the case communities themselves, are conservative.

CHAPTER 4: RESULTS

4.1 Introduction to Results

The following results chapter presents the results from archival data, documents, and interviews of the four case study municipalities. Each of the cases will begin with a brief background to the geographic region, and introduction to the plan's information and overview. Next, a section of each of the findings of implementation structure, plan outcomes, and partner outcomes are presented in each case study municipality.

For each municipality, tables of information indicate whether the implementation structure is observed from the interview, or from a document or archival source. Implementation structure findings from the interview presented in the table are the reduced information. With the partner outcome tables, findings are reduced information from partner outcome responses. The end of the results chapter presents a cross-case table of implementation structures and outcomes, and partner outcomes that summarize findings collectively across the case study municipalities.

4.2 Key Legislation, Policies, and Programs

The following table lists and briefly describes important key legislations, policies, and programs in British Columbia and Ontario, the provinces that account for the four case studies, as well as important key legislations, policies, and programs on a larger regional scale.

Table 2 - Table of Key Legislations, Policies, and Programs

BRITISH COLUMBIA	
Green Communities Act (Bill 27)	Bill 27 requires municipalities to have targets, policies, and actions for greenhouse gas emissions in official community and regional growth strategies (FCM & ICLEI, 2016).
Climate Action Charter (CAC)	Municipalities sign onto the Climate Action Charter to be carbon neutral in corporate actions as well as measuring community-wide GHGs, and to create energy efficient communities (FCM & ICLEI, 2016). Municipalities that participate receive a grant the same amount as their BC carbon taxes through CARIP (Climate Action Revenue Incentive Program) (FCM & ICLEI, 2016).
GHG Reductions Target Act (Bill 44)	Adds legislative rigor to provincial GHG targets and government operations (e.g., province target will be 33% below 2007 levels by 2020) (HB Lanarc, 2010).
BC Energy Plan	55 policy actions for climate change and energy security (HB Lanarc, 2010).
BC Building Code	The BC Energy Plan contains energy reduction targets for buildings by 2020 (HB Lanarc, 2010).
ONTARIO	
Municipal Energy Plan Program (MEP) Ontario	The MEP program provides funding to municipalities to develop plans that identify opportunities to conserve energy, improve energy efficiency, and reduce GHG emissions (Ontario Ministry of Energy, 2016b).
Ontario Cap and Trade Program	With the first compliance period to start on January 1, 2017, the cap and trade program requires major emitters and mandatory

	participants to report and limit their emissions, and obtain allowances where necessary (Ontario, 2016a).
Ontario's Climate Change Action Plan	6% reduction in GHG emissions from 1990 levels by 2014; 15% by 2020; 37% by 2030; and 80% by 2050 (Ontario, 2016b).
Long-Term Energy Plan	Ontario's Long-Term Energy Plan helps to create a future of safe, clean, reliable, and affordable energy (Ontario Ministry of Energy, 2016a).
Green Energy Act (GEA)	This act was created "to expand renewable energy generation, encourage energy conservation and promote the creation of clean energy jobs" (Ontario Ministry of Energy, 2015) through elements such as building codes and household appliance efficiency standards (Ontario Ministry of Energy, 2015).
The new Ontario Building Code (2012)	Increased the energy efficiency standards for building new homes and buildings (City of London, 2013b).
REGIONAL	
Western Climate Initiative (Cap and Trade)	Large emitters in 5 sectors in 11 jurisdictions to meet reduction targets and participate in the cap and trade systems of emissions (HB Lanarc, 2010).
Compact of Mayors	Committed cities globally commit to this program to create climate action and adaptation plans through a series of requirements (Compact of Mayors, n.d.).
Canada's Action on Climate Change	17% reduction in GHG emissions from 2005 levels by 2020 (City of London, 2013b).
C40	The C40 Cities Climate Leadership Group is a network of megacities globally committed to addressing climate change (C40 Cities, n.d.).
The Partners for Climate Protection (PCP) Program	The PCP program is a network of local governments in Canada committed to addressing climate change (ICLEI Canada, n.d.-b).
Carbonn Climate Registry	The carbonn Climate Registry is a "global mechanism developed for local governments by local governments. It enables them to publicly and regularly report their local climate action developments" (carbonn Climate Registry, n.d.).

4.3 District of Saanich, British Columbia

4.3.1 Background to Geographic Region

With a population increase of 1.4% from 2006 to 2011, Saanich had a 2011 population of 109,752 (Statistics Canada, 2012d). The population is expected to have an annual growth of 0.45%; the projected population in the year 2036 is 123,000 (MXD Development Strategists, 2013 Ltd.). Saanich has a land area of 103.78km^2 and is part of the CMA (census metropolitan area) of Victoria, British Columbia (Statistics Canada, 2012d). Saanich is on the west coast of Canada. The economic sectors of Saanich are quite diversified, including advanced technology, tourism, oceans and marinespace, government, education, construction, agriculture, retail, and healthcare (MXD Development Strategists, 2013).

4.3.2 Saanich Plan Information

Saanich Climate Action Plan (CAP)

- Community GHG Target: 33% reduction from 2007 by 2020
- Year Adopted: 2010 (FCM, 2015b)
- Overview of plan content and structure of the Saanich Climate Action Plan (Appendix K)

Other Municipal Plan Linkages

Saanich's Official Community Plan in 2008 was the first document to register the municipality's commitment to climate change; and in 2010, the municipality forwarded the commitment into both the Saanich Climate Action Plan and the Saanich Climate Change Adaptation Plan (Saanich, n.d.). The Climate Action Plan is the second of three plans in the municipality addressing climate change (Saanich, 2010). The Official Community Plan was the first plan to support provincial climate action, and the third was a climate adaptation plan (Saanich, 2010).

Purpose of Plan

Embedding climate action commitment into the Official Community Plan, Saanich identified the opportunity to be an example for other local governments, simultaneously

transforming the municipality into a better place to live (Saanich, 2010). Additionally, the Climate Action Plan helps to reduce the community's carbon footprint and reduces reliance on fossil fuels (Saanich, 2010).

The plan was also designed to align with the PCP program, setting reduction goals and targets for corporate and community-wide emissions while identifying actions to meet those targets to mitigate climate change (Saanich, 2010).

Table 3 below shows the five implementation structures of the Saanich Climate Action Plan as determined from the interview and document and archival sources.

Table 3 - Saanich Climate Action Plan Implementation Structure

Structure	Plan	Source
Engagement	Project-based; ~10 "core implementation partners"	Interview
Partner Actions	Municipality shares information; when opportunity arises, discuss ideas, find projects and areas in Saanich to interact; partner with those already familiar with issue	Interview
Collaborative Oversight	Municipal staff puts together information; create programs and report to Council annually; Sustainability Coordinator	Interview
Communication	Climate action results communicated through Saanich Strategic Plan, the Climate Action website, as well as through newsletters (ICLEI, 2013)	Document and Archival
	Social media; quarterly newsletters to public; capital regional district – quarterly meetings, municipalities can share work; media events	Interview
Monitoring	Public reports of progress are made to stakeholders (Saanich, n.d.); Saanich reports to residents and Council through "Annual and Financial Reporting"; reports to the province through the "CARIP" (Climate Action Revenue Incentive Program); reports internationally through the "Carbonn Climate Registry" (Saanich, n.d.)	Document and Archival
	Annual reporting part of whole organization; CARIP reporting; 2012 CEEI report not officially launched; will create own estimates; carbonn	Interview

4.3.3 Plan Outcomes

In the CEEI report, totaling transportation, buildings, and solid waste, there was an overall decrease from 2007 to 2010 on both energy and GHG emissions, and an increase in population from 2007 to 2010 (British Columbia, 2014b).

2007 population - 112,062; Energy (GJ) - 9,731,631; CO2e(t) - 440,832 (British Columbia, 2014b)

2010 population - 114,140; Energy (GJ) - 9,602,296, CO2e(t) - 426,468 (British Columbia, 2014b)

Table 4 below shows partner outcomes from partner interviews. For Saanich, the municipal informant and six implementation partners participated in the study.

Table 4 - Saanich Partner Outcomes

Capital Type	Resources Gained	Related Comments	Frequency
Human Capital	Knowledge and learning	more opinions, options; creating awareness of programs, opportunities and barriers; experience and knowledge shared	3
	Inductive – other Moral support	comfort not on own; verifies on the right track	2
Organizational Capital	Increased impact on community sustainability	accelerating to low carbon economy; better solution for community; benefit the residents – double incentives; drive energy efficiency; successful on mitigation work	5
	Accessed marketing opportunities	access to markets	1
	Accessed business opportunities	grant	1
	Innovation	awareness and ideas - innovation	1
	Relationships	building stronger relationships; access to relationships	2
	Reputation	reputation improved; identify community doing interesting things	2
	Sustainability programs	passed over project implementation; creating programs; launching programs; expanding programs	4

Overall, Saanich's implementation of the Saanich Climate Action Plan involves all five implementation structures; and partner outcomes of human capital and organizational capital were found. However, monitoring for community-wide GHG emissions and energy is not at a frequency that allows for recent community-wide GHG emissions and energy to be known because there is a delay in the CEEI.

4.4 City of Guelph, Ontario

4.3.1 Background to Geographic Region

The City of Guelph experienced a 5.9% population growth rate from 2006 to 2011, with the city having a population of 121,688 in 2011 (Statistics Canada, 2012a). This growth rate is the same as the national average growth rate of 5.9% during the same period (Statistics Canada, 2012a). The city has a projected growth rate of 2% per year, reaching 180,000 by 2031(FCM, 2016a). The City of Guelph has a land area of 87.2km^2 (Statistics Canada, 2012a). Guelph has a diverse and stable economy (City of Guelph, 2015). Guelph has five key sectors of the local economy: agri-food, innovation firms, environmental management, technology, and tourism operators (City of Guelph, 2015).

4.3.2 Guelph Plan Information

Community Energy Initiative (CEI)

- Community GHG Target: "Reduce energy use in buildings, industry, and transportation by 50% per capita and GHG emissions by 60% per capita by 2031", from 2006 levels (FCM, 2016a)
- Year adopted: 2007, entered implementation phase in 2010 (*Community energy initiative update task force terms of reference*, n.d.)
- Overview of plan content and structure of the Community Energy Initiative (Appendix L)

In 2006, the Consortium decided to formalize a long-term Community Energy Plan (CEP) which would guide the city's energy future for years to come (Garforth International llc, 2007). The name of the plan had changed from CEP to the current Community Energy Initiative (CEI) reflecting entrance into the implementation phase (*Community energy initiative update task force terms of reference*, n.d.).

"Guelph's goals under the plan are to:

- use less energy in 25 years than [they] do today
- consume less energy per capita than comparable Canadian cities
- produce less greenhouse gas per capita than the current global average" (City of Guelph, 2016b)

Purpose of Plan

Guelph has a population of core residents and an additional population of 18,000 students during the school year, is situated west of Toronto, and attracts population growth (Garforth International llc, 2007). Guelph's population is expected to grow to 180,000 within the city by 2031, supported by commercial and industrial development activities (Garforth International llc, 2007). This translates to an addition of approximately 20,000 homes plus industrial growth (Garforth International llc, 2007). The City has committed to implementing an energy plan that can support the population growth and help with competitiveness and environmental performance (Garforth International llc, 2007).

Other Plan Linkages

A strategic goal of Guelph's official plan is to, "Establish and implement policies and actions that will contribute to achieving the targets of the City's Community Energy Plan" (City of Guelph, 2013, p.18)

The table below show the five implementation structures of Guelph's Community Energy Initiative as determined from the interview and document and archival sources.

Table 5 - Community Energy Initiative Implementation Structure

Structure	Plan	Source
Engagement	Informal engagement; ad-hoc; task force ended 2012; will be recruiting for a task force; ~6 "core implementation partners"	Interview
Partner Actions	Defining the role of local governments in CEI update; the city provides leadership and planning; major project – district energy system involved utility, local customers, development community, public input; major project – energy efficiency retrofit strategy	Interview
Collaborative Oversight	Municipal oversight; Future task force – oversight role; Manager, Community Energy	Interview
Communication	Webpage; social media; CEI update to Council results in communication to community; council meetings publicly presented and activities related to CEI result in communication and outreach	Interview
Monitoring	To monitor progress towards targets an *Energy and Emissions Monitoring Report* is prepared every year by The City of Guelph, assisted by Guelph Hydro Inc. (Guelph Hydro Inc, 2013a)	Document and Archival
	Currently refreshing Community Energy Initiative; Future task force– monitoring role; reports on website; update to 2015 - unpublished	Interview

CEI Update

An upcoming CEI update is expected to be provided to Council in Spring 2017, with progress reports given to Council regularly (City of Guelph, 2016c). Of the three main scopes, two are closely related to this study. One is to re-focus the CEI as a community-led initiative, by empowering stakeholders to decide on the priorities and lead initiatives; and another, to develop progress metrics and compare to other municipalities by coordinating reporting protocols (City of Guelph, 2016c). Some closely relevant principles of a CEI update include, "Community-based governance, oversight and reporting; improved community engagement with local stakeholders; clarity on the role of the Local Government, Agencies and stakeholders; partnering with external third party advocacy and support groups; rigorous analysis, reporting and oversight in support of developing

acceptable baseline targets and communicating measurable results" (City of Guelph, 2016a, p.149).

4.4.3 Plan Outcomes

The CEI was adopted in 2007. The population of the City has been increasing steadily since 2006 (Guelph Hydro Inc, 2013b). From 2006-2012, energy use has decreased 17.6% per capita, and greenhouse gas emissions has experienced a decrease of 26.3% per capita since 2006, while the total population increase was 21.7% (Guelph Hydro Inc, 2013b). These are the most recent publicly available results. A more recent staff report mentions, "Energy and Emission per capita fell in early stages but remained stalled" (City of Guelph, 2016a, p.117). GHGs and energy use per capita have been "roughly at the same level" (City of Guelph, 2016a, p.140) since 2009 (City of Guelph, 2016a). A decrease in fossil fuel based electricity supplied to Guelph contributed to the early decreases, while the stabled indicators are the result of ongoing overall improvements in efficiency offset by growth (City of Guelph, 2016a). Currently, an update of the CEI is in progress at the time of this study.

The following table is directly from the City of Guelph Energy Usage & Greenhouse Gas Emissions Summary Report 2012 (Guelph Hydro Inc, 2013a).

Table 6 - "Per Capita Energy Usage and GHG Emissions from 2006 to 2012" (Guelph Hydro Inc., 2013a, p.4)

Year	Population	Energy Usage (GJ/Capita)	GHG Emissions (tonnes of eCO2/Capita)
2012	137,162	181.7	7.0
2011	135,770	188.0	7.5
2010	131,605	186.7	7.8
2009	127,439	188.0	7.4
2008	123,274	202.3	8.5
2007	119,108	213.5	9.4
2006	114,943	220.4	9.5

(Guelph Hydro Inc, 2013a)

The table below shows partner outcomes from partner interviews. For Guelph, the municipal informant and 4 implementation partners participated.

Table 7 - Guelph Partner Outcomes

Capital Type	Resources Gained	Related Comments	Frequency
Human Capital	Knowledge and learning	input into best practices	1
	Inductive – other Moral support	provide guidance, motivation	1
Organizational Capital	Accessed business opportunities	funding	1
	Influence	ensure support	1
	Increased impact on community sustainability	motivating people for mitigating climate change; achieve mission and vision; helping advance projects; plan continuation; reduce GHG emissions through communities	5
	Relationships	strengthened relationships with provincial government; bring together businesses and community	2
	Reputation	seen as leaders; benefit to reputation; preferred organization for advisory groups	3

In Guelph, the implementation of the Community Energy Initiative involves all five implementation structures. Partner outcomes of organizational capital and human capital were found. Energy and emissions per capita had an overall decrease in early stages but remain stalled.

4.5 City of North Vancouver, British Columbia

4.5.1 Background to Geographic Region

Compared to the national average growth rate of 5.9% between 2006 and 2011, The City of North Vancouver (N. Van) had a growth rate of 6.7% between the same time period. In 2011, N. Van had a population of 48,196; the land area of the city is 11.83 km^2 (Statistics Canada, 2012c).

North Vancouver is situated on the North Shore of Burrard Inlet and is a diverse urban city (*2015 Economic Snapshot*, n.d.). The city is home to many regional services, and the local businesses are also diverse, but can be characterized by port terminals, ship repairs, industrial areas, shipyards, and waterfront businesses (*2015 Economic Snapshot*, n.d.). Since N. Van has a central location easily accessible by car and public transport, it is one of Metro Vancouver's strongest commercial centers (*2015 Economic Snapshot*, n.d.). N. Van has an educated labor force, and a diverse business community, while maintaining and benefitting economically from the waterfront and its maritime history (*2015 Economic Snapshot*, n.d.).

4.5.2 North Vancouver Plan Information

Community Energy and Emissions Plan (CEEP)

- Community GHG target: Reduce emissions by 15% below 2007 levels by 2020 and 50% by 2050 (City of North Vancouver, n.d.-b)
- Adopted: 2010 (City of North Vancouver, n.d.-b)
- Overview of plan content and structure of the Community Energy and Emissions Plan (Appendix M)

Plan Goals

The City of North Vancouver (N. Van) has relatively low per capita emissions, the CEEP is fundamentally about deepening actions around land use, development, waste management and other activities to lower emissions reductions (HB Lanarc, 2010). The CEEP is also the

analysis document that supports the Amendment of the Official Community Plan (OCP) for North Vancouver to comply with the Local Government Act which requires local governments to have GHG reduction targets, policies, and actions (HB Lanarc, 2010).

The Community Energy and Emissions Plan's objectives are to: "develop a climate and energy vision that supports core City priorities; develop a high level framework that builds on and guides existing City activity, with new sector-specific policies and actions; estimate the near-term costs of climate and energy-related policies and actions; develop defensible and meaningful greenhouse gas reduction target(s)" (HB Lanarc, 2010, p.5).

Plan Linkages

The CEEP is built on the 100 Year Sustainability Vision for a zero carbon future, which was a planning and visioning exercise (City of North Vancouver, n.d.-b). The CEEP is the analysis and technical document, and the Official Community Plan (OCP) Amendment is the related document which outlines the targets, policies, and actions around GHG emissions and energy reductions (City of North Vancouver, n.d.-b). The OCP amendment arose from the Local Government (Green Communities) Statutes Amendment Act (Bill 27), requiring local governments have emissions reduction targets by 2010 (City of North Vancouver, n.d.-b).

First Climate Action Plan

Previous to the above plan was "City of North Vancouver Greenhouse Gas Local Action Plan", which achieved Milestone 5, where the target adopted in the plan for the community was, "By 2010, a decrease of 6% per capita below the predicted 2010 forecast" (The Corporation of the City of North Vancouver, 2010, p.4). In the Milestone 5 Submission of North Vancouver, a 2007 inventory showed an increase in community emissions compared with 1995 and above 2010 target. It was reported that the perceived increase may possibly be due to the differences in methodologies between inventories used in the 1995 baseline year compared with the 2007 inventory, including port lands in 2007 inventory but not in 1995 (The Corporation of the City of North Vancouver, 2010). Since the methodologies have changed between the inventory years, it is difficult to be certain of emissions trends (The Corporation of the City of North Vancouver, 2010). Between the inventory years,

however, a number of efforts had been made to reduce emissions, including the Climate Smart program for businesses and LiveSmart BC home retrofit program (The Corporation of the City of North Vancouver, 2010).

The table below presents the five implementation structures of North Vancouver's Community Energy and Emissions Plan as determined from the interview and web sources.

Table 8 - Community Energy & Emissions Plan Implementation Structure

Structure	Plan	Source
Engagement	No formalized structure; ~5 "core implementation partners"; known organizations added as appropriate	Interview
Partner Actions	City collaborates with organizations to implement programs	Interview
Collaborative Oversight	Council - decision-making body; staff committee reviews progress; Section Manager, Environmental Sustainability	Interview
Communication	Meetings; emails; no formal network	Interview
	Webpage; CARIP reporting (City of North Vancouver, n.d.-a)	
Monitoring	Council and staff committee monitors progress of plan; meetings to review progress of implementation and provides update to Council; partners - roundtable sharing of work; monitors emissions (transportation); make implementation adjustments as progress; 2020 – due for renewal; no data past 2010 (CEEI); look at programs being implemented; working on data for inventory	Interview

4.5.3 Plan Outcomes

For the CEEI report, between years 2007 and 2010, totaling transportation, buildings, and solid waste, there had been an overall decrease in both energy and GHG emissions and an increase in population between the same years (British Columbia, 2014a).

> 2007 population – 47,277; Energy (GJ) – 4,707,587; CO2e(t) – 211, 847 (British Columbia, 2014a)
>
> 2010 population – 50, 725; Energy (GJ) - 4,431,161; CO2e(t) - 197,957 (British Columbia, 2014a)

Community Energy Emissions Inventory Initiative:

The CEEI has the inventory years of 2007 and 2010. Although now released, there had been a delay in the last available finalized report in 2010 for the CEEI. Reports were delayed because, "Collecting and analyzing such a vast amount of data takes a considerable amount of time. As well, new transportation methodologies took much longer to implement than first anticipated. The draft reports have taken a long time to become final as we have made an extensive effort to check all the data for errors before release" (British Columbia Ministry of Environment, 2014). Currently, the province is working to produce the 2012 CEEI report. It was expected to be online in fall of 2016 (British Columbia, n.d.), but at the moment of writing, it appeared to be unavailable.

The table below presents partner outcomes from partner interviews. For North Vancouver, the municipal informant and three implementation partners were interviewed.

Table 9 - North Vancouver Partner Outcomes

Capital Type	Resources Gained	Reduction	Frequency
Human Capital	Knowledge and learning	partners are specialists; increase understanding, awareness	2
Organizational Capital	Accessed marketing opportunities	bring awareness to program; larger audience reach from outreach channels	2
	Increased impact on community sustainability	progress made with organizations; accelerating to low carbon economy; increase knowledge, availability, and adoption of electric vehicles in region; leveraging strengths of partners	4
	Influence	increase support; common voice to provincial government	2
	Innovation	awareness and ideas - innovation	1
	Relationships	relationship building	1
Physical Capital	Increased capacity	additional funding; pool resources to do projects	2

Overall, North Vancouver's implementation of the Community Energy and Emissions Plan involves all five implementation structures; and partner outcomes of each capital type were found. However, monitoring for community-wide GHG emissions and energy is not at a frequency which allows for recent community-wide energy and emissions to be known given the delay of the CEEI.

4.6 City of London, Ontario

4.5.1 Background to Geographic Region

The City of London had a population of 366,151 in 2011; a 3.9% increase from 2006 (Statistics Canada, 2012b). The city has a land area of 420.57km^2 (Statistics Canada, 2012b). The city is an important economic region of Ontario because of its close proximity to the US border, its agricultural lands, and its strong manufacturing sector (Prepare for Canada, n.d.). Although it has faced some difficulty, the largest industry has historically been the auto industry manufacturing and assembly (Prepare for Canada, n.d.). London also attracts foreign direct investment in information-technology, knowledge-based industries, advanced manufacturing, and food processing (Prepare for Canada, n.d.).

4.6.2 London Plan Information

Community Energy Action Plan (2014-2018) (CEAP)

- Community GHG target: Reduce GHG emissions by 15% from 1990 levels by 2020; reduce 80% in total GHG emissions from 1990 levels by 2050 (Corporation of the City of London, 2014)
- Adopted: July 2014 (Donnelly, Skimming, & Stanford, 2016)
- Overview of plan content and structure of the Community Energy Action Plan (Appendix N)

Overall Goals of the London Energy Connections Program:

"1. Increase the local economic benefit of sustainable energy use through:

a. Cost savings from energy conservation and energy efficiency,

b. Revenue from local production of clean & green energy products, and

c. Job creation associated with product and service providers engaged in these activities" (Corporation of the City of London, 2014, p.6)

"2. Reduce the environmental impact associated with energy use, through the use of greenhouse gas emission (GHG) reduction targets consistent with the Province of Ontario's goals, namely:

a. 6 percent reduction in total GHG emissions from 1990 levels by 2014,

b. 15 percent reduction from 1990 levels by 2020,

c. 37 percent reduction from 1990 levels by 2030, and

c. 80 percent reduction from 1990 levels by 2050."

(Donnelly et al., 2016, p.7)

Plan Purpose

The plan's goal is to have the City meet the provincial GHG targets using ways that generate financial payback; or at minimum, to financially break-even within a 10-year timeframe (Corporation of the City of London, 2016).

In the past fifteen years, the City of London has become more concerned with its energy use largely for environmental reasons (Donnelly et al., 2016). Smog-forming emissions are mainly due to the City's fossil fuel energy use (Donnelly et al., 2016). As prices for energy increase, the community is becoming more aware of the financial costs of energy consumption, leading many people to be more mindful of their own consumption while seeking ways to conserve energy (Donnelly et al., 2016).

Earlier Climate Action

London's GHG reduction commitments go back to *Vision '96 – Planning for Tomorrow* activities, and the *2003 Air Quality in London – Moving Forward Locally* air quality plan (which was part of the 2011-2014 Strategic Plan) (FCM, 2015a).

Other Plan Linkages

The CEAP plays a supporting role in the City's new official plan, The London Plan (Corporation of the City of London, 2016). The municipal Council recognizes the importance of climate mitigation, adaptation, and the need for sustainability in its 2015-2019 Strategic Plan (Donnelly et al., 2016).

The CEAP is linked to the City's other programs and initiatives in other service areas such as Development and Compliance, Planning, Children, and Fire Services (Donnelly et al.,

2016). A 2016 update and status of the CEAP identifies 12 examples including the 2030 Transportation Master Plan, and the Urban Forest Strategy (Donnelly et al., 2016).

The table below shows the five implementation structures of the Community Energy Action Plan as determined from the interview, document, and archival sources.

Table 10 - Community Energy Action Plan Implementation Structure

Structure	Plan	Source
Engagement	Identify the "influencers" in the community (individuals, organizations, neighborhoods, etc.), and develop strategies for engagement and enlisting (Donnelly et al., 2016); ~22 key stakeholders in *Action Plan Elements* (Corporation of the City of London, 2014); local businesses, local institutions, and the local community are key community energy stakeholders (Corporation of the City of London, 2014); "explore interest bringing Sustainability CoLab's 'Regional Carbon Initiative' concept" (Donnelly et al., 2016, p.14) to city	Document and Archival
	Reach Londoners through community associations and employers; Ad-hoc relationships, work with stakeholders on specific activities; exploring bringing Sustainability CoLab model to city; key stakeholders' activities are in the plan; there are stakeholders who committed to action for inclusion in plan	Interview
Partner Actions	• Role in playing "connect the dots" between key community stakeholders, their activities, and roles stakeholders can have in the CEAP (Donnelly et al., 2016) • City staff participated in steering committee which established the London Environmental Network, including groups with an energy focus (Donnelly et al., 2016) • City staff are influencers through Active & Green Communities (Donnelly et al., 2016) • City staff co-hosted the "Corporate Leadership for a Greener London" business engagement event with Labatt Brewery (Donnelly et al., 2016)	Document and Archival
Collaborative Oversight	Municipal staff oversees plan progress, reports back to community and Council; Manager, Air Quality	Interview
Communication	• In public education materials, easily comprehensible infographics are used, and are well received (Donnelly et al., 2016) • Ongoing conversations, implementation and collaborations an essential component of the London Energy Connections Program (Donnelly et al., 2016)	Document and Archival

	'Reduce Impact' website, encourage Londoners and stakeholders to post projects	Interview
Monitoring	• London Hydro and Union Gas provided utility data between 2011-15(Donnelly et al., 2016) • Annual Community and GHG Emissions Inventory reports for 2013, 2014, and 2015 (Donnelly et al., 2016) • The CEAP is a dynamic document, when actions are added from new opportunities, it will be included in progress reports (Corporation of the City of London, 2014) • Annual reporting on actions and progress is part of plan design (City of London, 2013a) • Publishing Annual Community Energy and GHG Inventory Reports on an annual basis (Corporation of the City of London, 2014) • Publish reports on city-led plan actions annually (Corporation of the City of London, 2014). • Annual community energy and GHG emissions inventory reports for 2013 - 2015 (Donnelly et al., 2016) • Some stakeholders provided information about their own actions for the plan, and the proposed next step is to contact stakeholders that provided information about their actions for the plan for an update of partner actions (Donnelly et al., 2016)	Document and Archival
	Annual Energy and GHG inventory; Future plans to reach out to stakeholders (that provided information for action) for updates; London Energy Connections Program - An ongoing program for developing, implementing and tracking the current Community Energy Action Plan and subsequent plans	Interview

4.6.3 London Plan Outcomes

Plan Outcomes 2015

- Population in 2014 was 375,000 (City of London, 2015); and population in 2015 was 378,000 (City of London, 2016).
- Total community energy use in 2015 was 16% above 1990 levels (City of London, 2016), down from 18% above 1990 levels in 2014 (City of London, 2015) but is below "business as usual" forecast in 1990, demonstrating impact of recent energy conservation activities (City of London, 2016).
- Per capita energy use in 2015 was 6% below 1990 levels (City of London, 2016), compared with 4% below 1990 levels in 2014 (City of London, 2015). It is the biggest improvement in residential energy use per capita, attributing to energy

efficient appliances, retrofits and new home construction (City of London, 2016).

- Total GHGs in 2015 were 8% lower than 1990 levels (City of London, 2016), compared with 6% below 1990 levels in 2014 (City of London, 2015).
- Per capita GHG emissions in 2015 were 25% lower than 1990 levels (City of London, 2016) compared with 24% lower than 1990 levels in 2014 (City of London, 2015).

Examples of Plan Outcomes Context

- Cold winter of 2015 influenced space heating and process heating needs for industrial, commercial, and institutional buildings as well as facilities (City of London, 2016).
- 6% energy use in 2015 was below 1990 levels related to industrial, commercial and institution sector partially due to aftermath of the 2008-2009 recession, but efforts have been increased by local utilities to promote energy conservation and demand management (City of London, 2016).
- Cold winter of 2014 increased demand for energy use which was reflected especially in the residential sector. However, there were still improvements from the baseline year in the residential sector possibly due to energy efficiency of consumer appliances, home retrofits, space heating and cooling systems, and new home construction (City of London, 2016). Residential energy per capita in 2014 was 5% below 1990 levels (City of London, 2015) compared with 13% lower in 2015 (City of London, 2016).

The table below shows partner outcomes from partner interviews. For London, the municipal informant and two implementation partners were interviewed.

Table 11 - London Partner Outcomes

Capital Type	Resources Gained	Related Comments	Frequency
Organizational Capital	influence	influence	1
	reputation	preferred organization for advisory groups	1
	relationships	introduced to stakeholders; connect community together	2
	increased impact on community sustainability	reduce GHG emissions through communities	1

Overall, London's implementation of the Community Energy Action Plan involves all five implementation structures; and partner outcomes of organizational capital were found. Plan outcomes are in the direction towards plan and overall program goals, which is to decrease community-wide greenhouse gases. This direction describes the year 2014 to 2015 as this plan was adopted in 2014.

4.7 Cross-Case Comparison and Tabular Summaries

The following section presents two tables (Tables 12 and 13) that summarize the implementation structures, plan outcomes, and partner outcomes across the case municipalities. Further, Table 14 in Chapter 5 summarizes the presence of the five implementation structures, as well as their plan outcomes.

Table 12 – Cross-Case Comparison of Implementation Structure and Plan Outcomes

Implementation Structure	Saanich	Guelph	North Vancouver	London
Engagement	Present	Present	Present	Present
Partner Action	Present	Present	Present	Present
Collaborative oversight	Municipality oversees	Municipal oversight, upcoming task force	Municipality oversees	Municipality oversees
Communication	Present	Present	Present	Present
Monitoring	Present, but community energy & emissions delayed	Present	Present, but community energy & emissions delayed	Present
Plan Outcomes (GHG & Energy)	Recent community GHG & Energy undetermined	Community GHG and energy use decreased per capita from 2006 to 2012; decreased in early stages, and stalled; roughly stable since 2009	Recent community GHG & Energy undetermined	2015 – per capita energy below 1990 levels & total energy above 1990 levels, but below "business as usual forecast"; decreased from 2014 2015 – total and per capita GHGs lower than 1990 levels; decreased from 2014

The table below presents the partner outcomes from the municipalities and their partner organizations across the four cases.

Table 13 - Partner Outcomes Across Municipalities

Capital Type	Resources Gained	Reduction	Count
Human Capital	Inductive - Moral Support	provide guidance, motivation; comfort not on own; verifies on the right track	3
	Knowledge and Learning	partners are specialists; increase understanding, awareness; input into best practices; more opinions, options; creating awareness of programs, opportunities and barriers; experience and knowledge shared	6
Organizational Capital	Accessed Business Opportunities	funding; grant	2
	Accessed Marketing Opportunities	bring awareness to program; larger audience reach from outreach channels; access to markets	3
	Increased Impact on Community Sustainability	progress made with organizations; motivating people for mitigating climate change; accelerating to low carbon economy x 2; achieve mission and vision; better solution for community; opportunity to benefit the residents – double incentives; reduce GHG emissions through communities x 2; drive energy efficiency; helping advance projects; successful on mitigation work; plan continuation; availability and adoption of electric vehicles in region; leveraging strengths of partners	15
	Influence	increase support; common voice to provincial government; influence; ensure support	4
	Innovation	awareness and ideas - innovation x 2	2
	Relationships	relationship building; strengthened relationships with provincial government; bring together business and community; introduced to	7

		stakeholders; connect community together; building stronger relationships; aAccess to relationships	
	Reputation	sSeen as leaders; bBenefit to reputation; reputation improved; identify community doing interesting things; preferred organization for advisory groups x 2	6
	Sustainability Programs	passed over project implementation; creating programs; launching program; expand programs	4
Physical Capital	Increased Capacity	additional funding; pool resources to do projects	2

CHAPTER 5: DISCUSSION

5.1 Research Question 1

1. What implementation structures are present during the implementation of municipal community climate action plans and community energy plans using a partnership approach in Canada? What are the plan outcomes and partner outcomes of the implementation of these plans?

The table below summarizes the implementation structures and plan and partner outcome findings across the case studies, and compares it with the literature on the larger study. The discussion following Table 14 discusses areas in which the empirical findings and the literature are not quite similar.

Table 14 - Implementation Structure and Outcomes Comparison

Implementation Structure	**Empirical (interview and document/ archival)**	**Literature**	**Comments**
Engagement	Present in all cases	Engages organizations from various sectors, or a way to add them (Clarke, 2011)	Validates adjacent literature
Partner Action	Present in all cases	Individual organizations implementing (Clarke, 2011)	Validates adjacent literature
Collaborative Oversight	Municipal oversight	Collaborative arrangement to oversee implementation (Clarke, 2011)	Guelph is undergoing plan update to include collaborative oversight, but otherwise municipal oversight
Communication	Present in all cases	Communication system to network and reach citizens (Clarke, 2011)	Validates adjacent literature
Monitoring	Present in all cases	Monitoring system allows for adjustment and renewal (Clarke, 2011)	Monitoring of community energy and emissions in Saanich and North Vancouver delayed
Plan Outcomes	**Empirical**	**Literature**	**Comments**
Community-wide GHG and energy use	**Saanich** – GHG and energy, plan outcome data dated	Moving towards plan outcomes since trends are leading towards	

	North Vancouver – GHG and Energy plan outcome data dated **Guelph** – Overall decrease in GHG and energy use; decreased in early stages followed by stall; (2015) unpublished **London** (2015) decreased in GHG and energy use from 2014-2015	collaborative goals (Clarke, 2011)	
Partner Outcomes	**Empirical**	**Literature**	**Comments**
	Partner outcome of moral support (Human capital), but increased capacity due to new engagement mechanism not found	Findings consistent with the work of Clarke & MacDonald (2016)	Validates literature and adds new outcome

In all of the municipalities, communication systems, individual partner organizations implementing, and partner engagement implementation structures were present. The presence of these implementation structures validates the literature.

The empirical and literature differences are in oversight and of the monitoring structures. Currently in the cases, it is the municipalities who are responsible for the oversight of the plan progress; however, Guelph's CEI is undergoing an update where a principle of the update is "community-based governance, oversight and reporting; improved community engagement with local stakeholders" (City of Guelph, 2016a, p.149). Guelph previously had a Mayor's Task Force on Community Energy (multi-stakeholder governance), which was created in 2010, but its mandate expired in 2012 (City of Guelph, 2016a).

Guelph's Community Energy Initiative in 2010 had engaged stakeholders on a Task Force, but the mandate expired in 2012 (City of Guelph, 2016a). The terms of reference for the upcoming Task Force states that it provide, "a forum for community-based stakeholder

guidance, oversight and reporting to the community and to Council during the update of the Community Energy Initiative" (Community energy initiative update task force terms of reference, n.d., p.1). Guelph is putting this structure in place in comparison with other case communities because one of the plan's scopes is to focus the plan as a community-led initiative (City of Guelph, 2016c). Local authorities have a key role in coordinating partner actions and getting the community involved with policy programs (Bulkeley & Betsill, 2005). In urban climate governance, a global study has shown that in the majority of cases, it is the local governments who have the main leading role in urban climate change efforts, but that other private and civil society actors may also play key roles (Castan Broto & Bulkeley, 2013). Also, collaborative governance is useful for connecting cross-sector stakeholders, giving them a chance to interact (Ansell & Gash, 2008).

In terms of monitoring, all of the cases have structures that include reporting and opportunities for renewal; however, the monitoring of GHG and energy use in both B.C. municipalities have been delayed due to delays in the CEEI. This raises the question regarding to what extent an implementation structure should be put in place, which is possibly a question that may be answered quantitatively. What was also found was that for partner engagement, core partners are engaged on an ad-hoc basis and activities basis, varying from relatively more formal (e.g., London) to less formal (e.g., North Vancouver). Similar to partner engagement for climate adaptation, partners were also found to be engaged on an ad-hoc basis (Hughes, 2015). As this was generally similar across the municipalities, this may be a context-specific characteristic of the engagement structure, rather than the size of the partnerships.

The question that the research has raised was to the extent an implementation structure should be in place, arising specifically from that of the monitoring structure. However, extent is thought of as a question to be answered quantitatively. For example, in terms of communication, how frequently should a website be updated? Another aspect of extent is what is considered to be full extent. Is the question of extent relative to a city's specific attributes or resources? That is, if a city is creating annual reports and inventories at

present, is that considered to be full extent? Therefore, if a quantitative study were to be conducted, the above would need to be considered.

On the other hand, to look deeper into the structures being employed, and to later explore further the relationships between structures to outcomes, it is important to note that both the detailed display of structures within each case in Chapter Four and the cross-case summary tables should be observed in combination for analysis, rather than regarding Table 12 as being the culmination. The difference in the detailed tables versus Table 12 is that the latter offers patterns to be observed which help in forming an analysis. As demonstrated in the more detailed tables in Chapter Four, there are some general similarities and differences in the elements of the structures, and the different elements are showcased. As this research uses a pragmatic worldview, the background to the presence of a structure being in place is offered a greater meaning below, and may also be the link between Table 12 and to each detailed case table. The elements and configurations of the structures are perhaps a combination of the result of decisions that the city make, what resources they have, and what works for the city. As mentioned by Clarke (2012), system designs can be different, and implementation structures can build on the municipality's capacity and strengths that they already have.

Thus, since both extent is not defined and elements within a structure may be a result of a combination of factors, if there are elements of a structure or one or more elements of a structure which largely serve(s) the general purpose of the structure, then the structure is thought of as employed. This provides the link between the detailed tables and summary tables, and more in-depth meaning into the patterns that can be observed from the cross-case matrix.

Again, taking on a pragmatic perspective for this research, to determine if a structure is generally employed, a general question as to whether a certain purpose should be met may be asked. Partner engagement – Has it resulted in partners being involved? Partner actions – Are there known actions and/ or results from partners taking action? Oversight – Is there a person or a party who is able to provide information on the overview of the

implementation? Communication – Is there a method used by which information is being transmitted? Monitoring – Are previous and recent high level indicators of implementation known so trends can be identified?

Element(s) of structures from across the cases, which are thought to be the main pragmatic element when thinking about the above questions for structures, are discussed next. For partner engagement, the municipalities are engaging partners on an ad-hoc basis and activities basis. However, in a pragmatic sense of considering the question above: Has this resulted in partners being involved, and thus the structure is employed? From the list of participants and from Table 1, this structure is employed across all the cases as it has resulted in partners being involved. In terms of partner actions, are there known actions and/ or results, and thus this structure is employed? Partner outcomes was a focus of the research and is coded from the partner interviews. However, as part of the questions, interviewees provided information about implementation and results which may contribute to the plan goals, in addition to what is known about what the municipality does for implementing the community-wide plan. As for oversight, it was the municipality that had the overall responsibility for overseeing the plan implementation. To address whether this structure is employed through considering the above question, there was a key municipal informant who was able to provide overview information regarding the implementation of the community-wide plan. The structure of communication is also employed, which has more varying elements within the structure. There are still one or more elements within this structure in each case that can help information be transmitted. It is probable that the cities' related webpage(s) are mainly the most effective way to transmit information since it can be updated with more ease and is widely publicly available. And, it may be the most effective way because, although there may be updated reports that may available, other media can be digitized and posted as part of webpages. For example, Saanich has media events as part of their communications, but that may require more resources and may not be as frequent nor as wide-reaching as a website. However, revisiting the monitoring example, because "extent" is not defined for the moment, and the CEEI is something that is an active element and *potentially* allows for more recent indicators to be known, this is why it has been offered as "Present", but with a

notation of being delayed. Another reason it has been marked as "Present" is because both Saanich and North Vancouver are working on data for inventories to support.

The communication structure is a fitting example of how there could be an element within a structure that may act as the main beam of the structure, especially as it relates to the pragmatic questions asked above. Since elements may be a combination of decisions, resources, and what works, the important idea is that within the structure, if there is one element that acts as the main beam, then it may be considered present, although there may be other elements in place to support and complement the structure. So, while these five implementation structures can be used to evaluate implementation structures (Clarke, 2011), there can also be a qualitative threshold to generally determine whether each is employed.

For the plan outcomes of the municipalities, regarding GHG and energy targets, both North Vancouver and Saanich have uncertain GHG and energy outcomes due to delays in monitoring and reporting. Both Ontario municipalities (London and Guelph) have had an overall decrease of GHG levels and energy use since the adoption of the plans studied. However, even though Guelph's plan outcomes have stalled, Guelph's key informant provides an important reminder that outcomes for long-term strategic plans may not be linear, and that methodologies for assessment may also be a consideration. Similarly, London's reports provide important insight into the external factors that can influence energy use and GHG emissions, including seasonal climates, population change, economic factors, and provincial energy decisions.

Overall, these municipalities may be considered to be quite successful as they have all achieved Milestone 5 of the PCP program in the community stream. Equally important, these municipalities continue to implement and have ongoing programs to mitigate climate change, renewing plans even after having achieved Milestone 5.

Partner outcomes were collected from core implementation partner organizations, and it was found that partner outcomes are identical to the previous sustainable community plan findings in the capital types and resources gained (Clarke & MacDonald, 2016). A new

partner outcome captured in two instances may be grouped together as moral support, as part of human capital. This was mentioned by the Sustainability Coordinator in Saanich and the Research and Strategic Initiatives Director at QUEST. These quotations are included in this thesis and have been validated. Collaborative implementation can provide guidance, motivation, and verification of efforts. An outcome not found, compared with Clarke and MacDonald, (2016), , was increased capacity due to new engagement mechanism. This may be due in general to the size of the partnership and/or the partner's functions as well as the number of interviews. On the other hand, the new partner outcome finding that is different from the context of community sustainability plans may be due to that the partnerships created for community-wide climate and energy purposes are relatively newer. Not many communities have reached Milestone 5 of the PCP program in the community stream, and the communities studied are leaders in this regard. Therefore, it may be for these reasons that moral support in this emerging space was discovered as a partner outcome from collaboration.

The following quotations were validated with the respective interviewees and were permitted for use in this thesis. The first two quotations demonstrate the new partner outcomes found in this context and proposed as human capital.

One of the partner outcomes discussed when Saanich's Sustainability Coordinator was reflecting on specific projects was the benefit of moral support. In addition, the quote below is also an example of increased impact on community sustainability:

"...we get to see how we have similar issues across municipalities. That always gives you some sort of comfort that you're not on your own and that you're working on the right thing. Different municipalities have different focuses, but being able to work with people and professionals in these areas who are dedicating time to the issues helps to verify that the work we are doing is on the right track, and makes for better projects as well. So I think working with multiple partners too, you tend to come up with something that's likely going to be a better solution for your community as well ..."

Mark Boysen

Sustainability Coordinator, District of Saanich

The following partner outcome is an expression of moral support, specifically one of motivation and guidance. It is also an expression of knowledge and learning:

"We want every community in Canada to become a smart energy community, part of our challenge is it's very difficult for us to work with all 5000 communities and their utilities, developers, and product and service providers. QUEST looks for strategic opportunities to engage with innovators and early adopters and then helps them move forward. The innovators, like the City of Guelph, are leaders within the QUEST network and help to provide guidance, motivation and input into best practices. There are communities that are just starting at this and when they experience a problem think they are unique in the challenges they are facing but QUEST is able to connect them with communities that have been at this for 10 years or more and share best practices with them."

Richard Laszlo

Director, Research & Strategic Initiatives, QUEST

When asked about the outcomes of the Fraser Basin Council, an organizational capital regarding relationships was expressed below, as building stronger relationships was a partner outcome identified:

"I would say a positive outcome is building stronger relationships with different and diverse stakeholders who are all working to try to reduce emissions. Increasing or strengthening those relations can lead to new collaborative opportunities down the line."

Charlotte Argue

Program Manager, Fraser Basin Council

Increased capacity and accessed marketing opportunities were outcomes identified by Metro Vancouver's Air Quality Planner from collaborative implementation with the City of North Vancouver. The following is an example of those two outcomes:

"I think one of the things from our collaboration has been that we've been able to do projects at a regional level with a number of municipal partners, including the City of North Vancouver, that we would otherwise not have been able to do because of both financial resources - the different parties being able to pool their resources together to do projects, and second, that we've been able reach a larger audience by using some of the outreach channels

that the municipalities have as opposed to Metro Vancouver and vice versa, the outreach channels that Metro Vancouver maybe has access to that the municipalities don't."

Jason Emmert

Air Quality Planner, Metro Vancouver

The quote below reflects how Climate Smart has helped to increase the impact on community sustainability.

"Working closely with Municipalities has been a key to our approach and success in engaging local businesses to take climate action. With an estimated 30% of community-wide emissions generated by the private sector, a partnership between businesses and the communities they call home is essential to accelerating the transition to a low-carbon economy."

Elizabeth Sheehan

Co- founder, President, Climate Smart Businesses

Another important discussion is the concept of implementation partners. This study began with the definition of implementation partners as organizations that are "implementing or helping to implement the plan" (FCM & ICLEI, 2016, p.18), either formal or informal. However, using this broad notion, there was some difficulty in quantifying the number of implementation partners in some interviews. As mentioned by Guelph's key informant, partners can be conceptualized by their level of activity, and pointed out that partners can have their own network of partners. A concept found to resonate often in the interviews was that of core implementation partners, which emerged with Guelph's key informant's mentioning of core partners. Core implementation partners tend to be organizations that are involved more in implementation and/or over the longer term, which in this context includes the utilities organizations. These are the partner organizations that were engaged in the interviews of this research. It is important for core implementation partners to be identified, engaged, and have positive relationships sustained for the long-term implementation of GHG and energy plans. A key concept to revisit is key partners who are major users and emitters of GHG and energy (Clarke, 2011). Ideally, key partners are engaged as core implementation partners. This challenge seems to be implicitly reflected in the literature since the literature does not seem to reveal a definition of partners which are

specifically for implementation, for social problems of this nature (sustainability/climate change), thereby making quantification difficult, especially since a broader sense was used. It is important to distinguish between implementation partners because, for example, in climate adaptation planning, partnerships for the planning phase do not always carry through to the implementation phase (Hughes, 2015).

Overall, for both partner outcomes and plan outcomes, the level of an outcome present was not approached in this research. For partner outcomes, this study concerned the types of outcomes that may be produced in this context. For plan outcomes as well, level of outcome cannot be determined because that would perhaps again require quantitative methods . In a quantitative study, structures could be studied by means of a detailed survey. For plan outcomes, perhaps further modelling can be used to see how current trends are approaching goals; and for partner outcomes, perhaps another detailed survey. Moreover, plan outcomes may not be linear. As this is qualitative research, as mentioned by Clarke (2011), it is the trends that are of interest. In Guelph and London, both quantitative and qualitative information helped to identify the trends of the high level indicators.

5.2 Research Question 2

2. What are the relationships, if any, between community climate and energy plan implementation structures, and plan and partner outcomes?

The table below summarizes the relationship between implementation structures and plan and partner outcomes, and compares with it the literature on the larger study.

Table 15 - Structure and Outcome Relationship Comparison

Relationship	Empirical (interview and document/ archival)	Literature	Comments
Relationship between implementation structure and plan outcomes	These five implementation structures, keeping in mind municipal oversight, are important for enabling the achievement of plan outcomes.	The five potential criteria for evaluating a sustainable community plan's implementation structure (Clarke, 2011); these are structural features which enable the achievement of plan outcomes (Clarke, 2011).	Validates adjacent literature
Relationship between implementation structure and partner outcomes	Engaging core implementation partners, in general, are sufficient to produce partner outcomes.	Generally, partnership design, including structures and processes, determine value generation for partners (Austin & Seitanidi, 2012; Clarke, 2014).	Validates adjacent literature

5.2.1 Implementation Structures and Partner Outcomes

Partner outcomes are outcomes that partners experience from the collaboration (Clarke & Fuller, 2010; Clarke & MacDonald, 2016). Literature on inter-organizational collaboration and benefits that result from this have been focused on business partnerships, and knowledge for public-private partnerships is even narrower (Arya & Salk, 2006).

In cross-sector social partnerships, benefits can be experienced by individuals, organizations, various sectors, and by society (Selsky & Parker, 2010); and there are many opportunities for community stakeholders to increase their innovation capacities to maximize the effects of co-benefits (Puppim De Oliveira et al., 2013). Generally, partnership design, including structures and processes, determine value generation for partners (Austin & Seitanidi, 2012; Clarke, 2014). For partner outcomes, when organizations are involved as core partners, benefits are expected to be experienced by the partners. The relationship between implementation structures and partner outcomes validates the literature.

While it is partnership design in general that can determine value for the partners (Austin & Seitanidi, 2012; Clarke, 2014), partner action, partner engagement, and communication may be particularly important structures to enable partner outcomes. For example, partner outcomes such as increasing community sustainability, increasing capacity, and gaining reputation would not be enabled if organizations did not act. Partners also need to be engaged, to enable such partner outcomes as influence and relationships. Further, communication activities are useful for commending progress, engaging partners, and disseminating best practices (Clarke, 2012), which help to achieve outcomes such as knowledge and learning and relationships. All structures are interrelated (Clarke, 2011) and it is typically partnership design that determines partner outcomes (Austin & Seitanidi, 2012; Clarke, 2014).

Although it is partnership design in general that can produce partner outcomes, the above are some speculations about which structures are more related to producing these outcomes. In terms of the question of why this might be viewed in a pragmatic sense, it is unlikely that an organization would enter and remain in partnership if it thought that such a partnership would cause any undesirable outcome. The above reasons may be possible explanations for why these structures can enable plan and partner outcomes, although further research may be conducted on what elements within a structure, or which structures, are thought of as most important for enabling partner outcomes.

5.2.2 Implementation Structures and Plan Outcomes

Creating and maintaining cross-sector partnerships should be for purposes of creating public value that cannot be achieved by a single organization (Bryson et al., 2006). Overall, for the relationship between implementation structures and plan outcomes, it is that implementation structures are important for enabling the achievement of plan outcomes (GHG emissions and energy use). The structures are interrelated - without partner engagement from various sectors, it is not possible for them to implement the strategy in their own organizations (Clarke, 2011). Inherently, if individual partners did not take action within their own organization, there would be no progress. Ideally, completing these actions and making progress will help a community reach its plan's goals of GHG reduction and energy use reduction, ultimately allowing the community a wide range of benefits.

Revisiting Saanich and North Vancouver in the cross-case comparison table, it can be seen that the lack of a structure affects plan outcome, specifically in the implementation structure of monitoring that renders plan outcomes uncertain in B.C. municipalities. Monitoring systems allow for adjustments during the implementation stage, and for plan renewal as required (Clarke, 2012). At the same time, the presence of all the implementation structures (i.e., London and Guelph) help to show that these implementation structures are important for enabling the achievement of plan outcomes. From the patterns shown in cross-case presentation of the case studies, where these five implementation structures are present for the implementation of the plan, plan outcomes are in the direction that is desired for achieving plan goals. Both Guelph and London have an overall decrease of GHG levels and energy use since the adoption of the plans studied. Guelph's plan outcomes in the early stages experienced a decrease in energy and GHG emissions, and although these levels are stalled, Guelph's key informant provides an important reminder that outcomes for long-term strategic plans may not be linear and that methodologies of assessment are a consideration. For example, emissions calculations for transportation can be derived from calculating fuel consumed citywide, while kilometers travelled for vehicles may also be used (Hoornweg, Freire, Lee, Bhada-Tata, & Yuen, 2011). The context of climate and economy are also influencers of GHG and energy use levels. In addition to the GHG and energy decrease, it is evident that collaborative implementation

has led to an increase in community sustainability, as mentioned by interviewees, and captured as part of partner outcomes. Partner action and partner engagement are particularly essential to achieving community-wide impacts.

The more detailed case tables in each of the cases, from Chapter 4 along with Table 12 (which helps to identify patterns), combined with the analysis of the linkage between them from the discussion of Question 1 in section 5.1, helps to pave the way to examining the relationship between implementation structures and outcomes. Per Clarke (2011), these implementation structures are needed for enabling the achievement of plan outcomes. Little is known theoretically about implementing collaborative strategies and implementation structures needed to achieve collaborative goals (Clarke, 2011). However, after identifying the structures in this case, there may be some speculation as to why or how these structures enable plan outcomes, and draws much on section 5.1 in thinking about the structures in a pragmatic sense.

Again, where these five structures are in place, plan outcome trends are in the direction of achieving collaborative goals. However, in terms of why or how these structures are enabling outcomes, in addition to first asking practical questions (i.e., as in discussion of research question one) as to whether these structures are employed, why or perhaps how these structures do enable, it can also be asked whether plan outcomes can emerge without these structures.

Asking the question of whether these outcomes would be enabled without a certain structure may also be a way the relationship between structures and outcomes can be conceptualized as enabling. For the implementation of a community sustainability plan, Clarke (2012) notes that without a strong communications framework, the value of the initiative may be questionable to council and community members (Clarke, 2012).

For community-wide plans, without the implementation of partners, there may not be meaningful and sustaining results at the community level. Without partners implementing, local governments may not have all the necessary resources and control to mitigate

emissions and reduce energy use at the community level. Without oversight, direction and coordination of efforts may be a challenge. Without engagement, it would be difficult to create a partnership for implementation of the community-wide plan. Without communication, information needed and important for the process of implementation will not be transmitted, and likely similar to implementing community sustainability plans, might make the initiative questionable to council and the community (Clarke, 2012).

To conclude, the relationship between implementation structure and plan outcomes is that these structures are crucial to enabling progress and plan outcomes. The "absence" of monitoring in B.C. municipalities specifically for community-wide GHGs and energy use has opened a question to the extent that these implementation structures need to be in place for plan progress (B.C. municipalities have continued to implement despite "missing" this feature, and the benefits of the feature). Without monitoring, important information regarding GHG and energy use is missing, which means this information may affect the availability of information that informs renewals. Community-wide climate and energy plans and their plan progress may be evaluated on the presence of these structures. Making plan progress and having outcomes progress in a desired direction, is necessary for reaching ultimate plan goals. Together with the analysis in 5.1 in examining how an employed structure can have a pragmatic purpose, the matrix patterns, partner outcomes on increasing community sustainability, and that these structures are imaginably hard to implement without, this study helps to show several ways these are structures enable the achievement of plan outcomes. In the literature review (Chapter 2), there is also a review of the structures and the functions that they may serve in implementing community sustainability plans. In the lens of the collaborative strategy management perspective, these structures are important for collaborative strategy implementation for enabling plan and partner outcomes.

All in all, it is important to remember that the collaborative implementation process and reaching plan outcomes rest in the larger picture of collaboration process models. Some collaboration models illustrate collaboration under ideal circumstances that may be weakened by internal and external barriers to collaboration (Selin & Chevez, 1995).

Changes in the domain in the collaborative strategic management process has an impact on plan outcomes (Clarke & Fuller, 2010). Many factors can influence a city's emissions, such as climate and income levels etc., in complex ways (Hoornweg et al., 2011). It would be logical to expect that cities with more energy efficient buildings or more public transit use would have lower per capita emission levels, but in terms of relative importance some researchers have pointed to income levels as a large emissions factor (Hoornweg et al., 2011). Shown in London's documents, the economy is one of these factors.

As contextual factors influence GHG emissions and energy use, these need to be considered. It may be beneficial to explore project-level impacts of the plan (e.g., project-level quantification of GHG reductions) to complement the information found in an overall community inventory for assessing interventions, since community-wide inventories capture both interventions and contextual factors. As mentioned in London's 2015 Community Energy and GHG Inventory, "Whether emissions continue to decrease depends upon the impact of energy and fuel conservation efforts, Ontario's upcoming Climate Change Action Plan, climate trends, economic growth, and consumer choices" (City of London, 2016, p. iv).

The PCP program is a much-needed framework in place for supporting addressing climate action by cities. Because it offers access to resources and is part of a network, the PCP program may be of help to cities that are looking to start on such a path and are looking to a framework for addressing climate change (ICLEI & FCM, 2008). However, adequacy of the program in helping cities address climate change may be that adequacy ultimately rests with the complex systems of a municipality in operation (i.e., what resources a city may have to implement; whether policies help to support implementation, etc.). For the target itself, the PCP program has a recommended target for the community level of six percent below baseline levels within ten years, but the targets may be revised from milestones two to three (ICLEI & FCM, 2008). The baseline year could be selected where there is the most complete and reliable data (ICLEI & FCM, 2008). However, the targets that cities adopt may differ for different reasons. For example, London's targets align with the goals of the Province of Ontario (Corporation of the City of London, 2014).

Ultimately, adequacy of the PCP program in helping to address climate change might be up to the city and the plans that they formulate and implement, but the PCP program and network may help to support this - such as getting a city started by moving through a framework, and possibly keeping the momentum of addressing climate change going because there are milestones to be achieved and recognized. Achieving the milestones may provide an experience for the city in which to build further momentum beyond the milestones. Moreover, the program also contributes to creating livable communities (ICLEI & FCM, 2008). Networks such as ICLEI have facilitated Canadian municipalities in GHG reduction efforts and one of the means by serving as a hub for municipalities addressing climate change (Gore, 2010).

Overall, the PCP program supports the structural features for community-wide implementation. However, this can mostly be said if municipalities progress to Milestone 5 or engage in Milestone 5 activities. Achievement of Milestone 5 is monitoring and reporting progress (ICLEI & FCM, 2008). This requires that actions of emissions reductions be monitored and inventories updated, as well as reporting activities to FCM and stakeholders (ICLEI & FCM, 2008). It also requires that community stakeholders and decision-makers be engaged in inventory development, plan development, and plan implementation (ICLEI & FCM, 2008). To carry out these activities, communication in general is needed. As for oversight, Milestone 4's guidance mentions that it is the responsibility of municipal staff to initiate plan action and keep the momentum going while other stakeholders can contribute to implementing projects (ICLEI & FCM, 2008). This means that a function of municipalities for implementing a community-wide plan should include oversight as part of the municipalities' tasks. More can be explored in the future regarding collaborative oversight in this context, such as whether incorporation of this into the program is possible.

5.3 Research Question 3

3. What lessons from previous studies regarding the relationship between implementation structures and outcomes for collaborative community sustainability plans are transferable to the context of community climate and energy action plans?

This question may be answered from the above table comparisons in section 5.1 and section 5.2, where empirical findings are displayed adjacent to the literature. In the "comment" column, a note was made to whether it coincided with the literature. Every collaboration has its own unique features, so there is not a universal formula for a partnership model (Clarke & Erfan, 2007). Overall, there are three lessons in particular that are transferable from the original context to the new context. The first is the relationship between implementation structures in general to partner outcomes, which is completely transferable. For local governments, it helps to inform how partnerships for community-wide plan implementation can be designed to help produce partner outcomes that attract partners and perpetuate engagement (Clarke & MacDonald, 2016).

The second transferable lesson is the importance of the implementation structures to be present to enable the achievement of plan outcomes. This is supported by how, through an absence of a certain structure (i.e., monitoring, in this case), important plan implementation and renewal information becomes unknown, hence rendering plan outcome uncertain. As the monitoring structure is not at a frequency that allows recent outcomes to be known, a key informant has mentioned that they are currently looking towards the programs being implemented. Additionally, for Guelph and London, where the implementation structures were present for the plan, the matrix revealed a pattern to show GHG and energy levels were in the direction desired for goals outlined in the respective plans. Interviewees also talked about achievements in collaborative implementation which is evident in their responses regarding increased impact in community sustainability as a partner outcome.

Although all of the case municipalities employ municipal oversight, when the City of Guelph implements community-based governance and oversight, Guelph's implementation structure will be consistent with the recommended implementation structures from the sustainable community plan findings. It would be worthwhile to check in with the City of Guelph once this implementation structure is in place.

There is opportunity to grow these partnerships, which is important as cities continue to grow. The path towards climate change goals is still an uncertain one (Burch, 2010b), and an emerging space that faces some challenges, such as contextual influences as mentioned earlier. In Aylett's (2014) study, a global survey shows that cities in Canada, Australia, and New Zealand are much less likely to report that there is an elevated level of internal support within their governments. Climate politics is another related area of study. Compared with other social issues, it is one that political scientists have given limited attention to, with only little work appearing in general political science journals on the subject (Bernauer, 2013). In this uncertain and emerging space, interwoven barriers that can inhibit action include cultural or behavioral barriers, regulatory or legislative barriers, structural or operational barriers, and contextual barriers (Burch, 2010a). After all, municipal institutions are a part of a system of human and environmental interactions, political and economic paths, along with public values that influence the range of policy responses a municipality has for addressing climate change (Burch, 2010a). Fortunately, barriers that can constrain climate action can also facilitate it (Burch, 2010a). These challenges in the emerging space present learning opportunities and opportunities to refine and develop partnerships to work towards collaborative goals – as scholars have mentioned, climate change governance can be viewed as a process of experimentation (e.g., Bulkeley & Betsill, 2005; Burch et al., 2014; Castan Broto & Bulkeley, 2013).

CHAPTER 6: CONCLUSION

6.1 Summary of Contribution to Theory

This study makes several contributions to theory and the larger literature on collaborative strategic management and cross-sector partnerships. The first contribution to theory is studying implementation structures and plan and partner outcomes in the context of implementing community-wide climate and community-wide energy plans in Canadian cities. A primary goal of this explorative study was to qualitatively test the implementation structures, outcomes, and any relationships found in the larger study of community sustainability plans, outside of the context of community sustainability plans. Examining community-wide climate and energy plans allowed for the exploration of implementation structures outside of the context of community sustainability plans, seeing what lessons are transferable and what new knowledge can be uncovered. It was learned that the structures of communication, monitoring, partner engagement, partner action and municipal oversight were important for the implementation of these community-wide plans.

The second contribution this study makes to theory is the concept of core implementation partners and the possibility of various levels of partners during the implementation of collaborative sustainability strategies. In the beginning, this study sought to examine large partnerships with 10 or more partners, and define partners by organizations that are either "implementing or helping to implement" (FCM & ICLEI, 2016, p.18). However, when the interviews began, the concept of an implementation partner needed to be better defined for quantification. It might be debatable to call an organization an implementation partner if it has not significantly implemented for a long time, is signed on but not implementing, or as discussed in one of the interviews, implementing the plan without knowledge of the plan, etc. A notion more commonly emerged was that of a core implementation partner – organizations that tend to be involved more in implementation and/or involved over the longer term, which in this context included utilities organizations that were identified by key informants, and consequently interviewed.

The third contribution to theory is the new partner outcome found in this study of collaborating to implement climate and energy action plans. Partners can experience validation, support, and leadership from collaborative implementation. In the emerging space of implementing community climate and action plans at the local level, the finding of this partner outcome is relevant.

Overall, the present study fills theoretical gaps in the literature, provides information useful for cross-sector partnership implementation of community-wide climate and energy action plans, and offers an understanding of implementation structures important for plan outcomes.

6.2 Contribution to Practice

The present study contributes several ideas to practice in the three areas of implementation - structures, context, and partner outcomes. In terms of implementation structures, the study highlights implementation structures presently employed for the implementation of community-wide climate and energy plans. It also outlines several resources that implementation structures can bring to partners. Local governments can connect with each other to share information on best practices for implementation structures that they may be using. The PCP program was selected to study cross-sector partnership implementation because it provided structure. A municipality having completed Milestone 5 would mean that they have monitored progress, a structure studied in this paper. Therefore, it may be possible to incorporate elements of the PCP program so that achieving certain milestones would mean a structure is in place.

In addition, although these implementation structures are important for the implementation of the plan, a continued understanding of external contextual factors and general influences that affect plan outcomes, and perhaps implementation structures, should also be a consideration. Factors affecting plan outcomes are complex; thus, by understanding the wide range of contextual factors that can influence plan outcomes, contextual factors can be potentially mitigated if negative, harnessed if positive.

Finally, this study contributes to practice in the area of partner outcomes. One of the outcomes identified in this research was moral support that comes as a result of collaborative implementation. In this context, there is value in looking to leading local governments for direction, and to see what they are doing to implement. A sense of leadership, motivation, guidance, and verification can be created amongst local governments and within local government partnerships. In the community stream of the PCP program, the case study communities are leaders, and it would be useful to be kept updated on the implementation structures of these communities. For example, future updates of interest could include looking at North Vancouver and Saanich again as CEEIs are published or if the municipality puts into place their own outcome monitoring structure. In London, they are exploring the possibility of bringing in an element for the engagement structure; and in Guelph, they are updating their plan to have community-based governance and oversight.

Generally, for partner outcomes, to attract core partners, it may be useful for local governments to communicate positive outcomes that partners might be able to experience. Local governments can also explore the possibility of deliberately creating certain benefits for partners to engage in collaborative implementation.

6.3 Limitations of the Research & Future Research Directions

Limitations

One limitation of this research is that the present study uses qualitative technique when examining elements that are quantitative in nature. Specifically, greenhouse gas emissions and energy use as well as their respective trends. For future research, this study may benefit from the support of considering quantitative data with respect to outcomes from implementation, such as project-level outcomes from climate and energy initiatives, or effects factors such as climate and the economy. This may be challenging based on the amount and nature of data that would be needed, and some efforts may not be quantifiable. However, this study benefitted from analysis that was based on interviewing knowledgeable informants, sound theory, appropriate qualitative methods as well as document and archival data that contained a wealth of information.

Another limitation is that it is unsure whether all partner outcomes are applicable to all municipalities outside of those studied. This is in part due to the small number of partners interviewed as well as there being varying ratios in the mix of types of partners in each sector in different municipalities. The partner outcomes, too, do not capture all core partners' outcomes in each municipality; not all core partners in each municipality were interviewed. Outcomes experienced by partners have been shown separately by case, and together in the four municipalities, but the applicability of all partner outcomes to a municipality outside of the cases studied is unknown.

Furthermore, another limitation is that it is unknown how completely transferable learnings from this research may be to municipalities outside of those in either British Columbia or Ontario with comparable or less population size, and regional contexts. As seen from this research, context has a role in the collaborative strategic management process, and the present research focused only on the municipalities in their respective B.C. and Ontario context. For example, the CEEI is unique to British Columbia. Also, implementation structures are changing (e.g., Guelph is moving to collaborative oversight), and so there may be a possibility that lessons learned about implementation structures

could evolve if this study were to be conducted again in the future.

Future Research

The most immediate future research question is the question of the extent to which implementation structures should be in place. New findings might be found by quantitatively researching the extent implementation structures need to be in place. For example, exactly how many communication mechanisms are used in comparison to population? This question of extent stems from the monitoring structure studied in this research. In B.C. municipalities, monitoring energy and emissions through the CEEI is present, but as the CEEIs have not been released for some time, this asks the question of frequency and effectiveness. Also, implementation partners, or levels of, need to be defined for social partnerships. Finally, for this study, to more accurately identify relationships in implementation structures and plan outcomes, there needs to be an understanding of the contextual factors that influence GHG emissions and energy use. For example, identifying the impacts at a project-level, such as project-level quantification of GHGs, would need to be carried out to compare and complement the information with an overall community inventory, since community-wide inventories capture both interventions and contextual factors. Also, rather than studying plan outcomes, plan progress can also be studied.

In summary, the present qualitative and exploratory study, which has examined implementation structure, plan outcomes, partner outcomes and the relationship between them in the context of community-wide climate and energy plans, has been fruitful. In addition to revealing implementation structures that are employed in this context, the study has helped to show that these five implementation structures are important for enabling achievement of plan outcomes and partner outcomes. In addition to contributing to the literature on collaborative strategic management and cross-sector partnerships, it contributes to practical knowledge for designing partnerships for helping to achieve plan and partner outcomes. Overall, this study at the local government level continues the conversation and efforts made at the international level around collaborative implementation, and makes progress towards sustainable development.

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APPENDICES

Appendix A – Case Study Selection Criteria

	Criteria	Bathurst	Brandon	Saanich	Fredericton	Guelph	London	North Vancouver	Ottawa	Pickering	Plessisville	Prince George	Regina	Richmond Hill	Thunder Bay	Vancouver	Yellowknife
1	The chosen site must be a community in the country of Canada	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	The community is a member of the "Partners for Climate Protection" program	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	The community must have achieved milestone 5 in the community stream of the PCP program by July 2016	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4	The community's available data and resources available must be in English	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
5	The municipality's population is not in the top 10 in Canada (Statistics	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓
6	The plan must have adopted a GHG emissions target year that extends beyond the current year (2016)			✓		✓	✓	✓		✓					✓		
7	The community must have a current climate action plan or energy plan that is part of the PCP program, or a plan developed after achievement of Milestone			✓		✓	✓	✓							✓		
8	There must be a community-wide plan to reduce GHGs that is a dedicated GHG action plan or energy plan, and not only part of a sustainable community			✓		✓	✓	✓									
9	The implementation of the plan must include 10 partners or more			✓		✓	✓	✓									
10	The community must have been implementing the plan in the most recent			✓		✓	✓	✓									
11	The community must have been available for information validation the week of July 18, 2016	✓	✓	✓		✓	✓	✓		✓		✓	✓	✓	✓		✓
12	The community must be willing and able to provide relevant data for the study			✓		✓	✓	✓									

Appendix B – Email to Potential Case Community

Dear (name of potential participant)

My name is Krista Wong and I am a Masters student working under the supervisions of Dr. Amelia Clarke in the School of Environment, Enterprise and Development at the University of Waterloo, in partnership with ICLEI Canada. The research project is entitled "Implementing Community Climate Action Plans in Canada: The Relationship between Implementation Structure and Outcomes". The purpose of this research is to provide insights into designing cross-sector partnerships effective for achieving **community-wide** GHG emissions targets by examining implementation structures and outcomes in community climate action plans.

I am contacting you as the City of Pickering is an excellent fit to be a case study community for the research project (such as achieving Milestone 5 in the community stream of the PCP Program, have been implementing the Local Action Plan for at least the past year, and have a GHG target that covers at least the current year 2016). I would like to seek your participation which entails an interview over the phone which will take approximately one hour to complete at a time convenient for you. You will also be asked to provide a list of implementation partners (*see note below) helping to implement in community-wide GHG reduction efforts (and contact information of the person at the organization to inquire about GHG reduction information, where available).

Please reply to this email (ktkwong@uwaterloo.ca) to express your interest. Upon your reply, I will provide you with further information, and to schedule an interview at your convenience.

Thank you for taking time to read this information and for your consideration.

Sincerely,

Krista Wong

Masters of Environmental Studies Candidate
School of Environment, Enterprise and Development
Faculty of Environment
University of Waterloo
Phone: (647) 871-9229
E-mail: ktkwong@uwaterloo.ca

Under the supervision of Dr. Amelia Clarke
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University of Waterloo
Phone: (519) 888-4567 ext. 38910
Email: amelia.clarke@uwaterloo.ca

Note: Partners are organizations or anyone who is helping to implement the community plan. Partners may be in various sectors such as NGOs, regional governments, electric utility, schools, school boards, gas utility, higher education institutions, business improvement areas, citizen groups, financial institutions, large companies, conservation authorities etc. For example, an organization helping to fund initiatives may be considered a partner, or companies implementing an energy conservation program etc.

Appendix C – Municipal Information of Study Letter and Consent Form

Information of Study

University of Waterloo

Date:

Dear *(insert participant's name):*

This letter is an invitation to consider participating in a study I am conducting as part of my Master's degree in the School of Environment, Enterprise and Development (Faculty of Environment) at the University of Waterloo in partnership with ICLEI Canada. I would like to provide you with more information about this project and what your involvement would entail if you decide to take part. Please take time to read the following information pertaining to the research project and discuss with involved parties regarding your community's participation.

Climate change mitigation at the community-wide level requires cross-sector partnerships in the community in order to stride meaningfully towards emissions reductions goals. The aim of this study is to identify the necessary collaborative implementation structures in place for success of community level climate action plans, as well as experiences of implementation partners. Also, providing insights into designing cross-sector partnerships can help to achieve community-wide GHG emissions targets. At the time of the interview or afterwards, you will be asked to provide a list of implementation partners and their contact information. For the interview questions, there is no preparation required, but for your early reference, you will also be sent the list of interview questions prior. The community will be listed as a case community and highlighted within the research study.

The interview will be conducted over the phone, and will be approximately 30 mins - 1 hour in length. You may decline to answer any of the interview questions if you wish. Further, you may decide to withdraw from this study at any time without any negative consequences by advising the researcher. With your permission, the interview will be audio recorded to facilitate collection of information, and later transcribed for facilitation of analysis. Interview recordings or any other data will be kept in a secure location, and will only be shared with the core research team. Participation in this study is voluntary. If you are willing to participate in this interview, please contact Krista Wong at ktkwong@uwaterloo.ca or (647) 871-9229. In your reply, please indicate a time when you will be available.

As this research project focuses on municipal implementation on climate change plans and not on individual opinion, ethics review by an Ethics Board at the University of Waterloo is not required. Should you have any comments or concerns resulting from your participation in this study, please contact Dr. Maureen Nummelin in the Office of Research Ethics at 1-519-888-4567, Ext. 36005 or maureen.nummelin@uwaterloo.ca.

I very much look forward to speaking with you and thank you in advance for your assistance in this project.

Sincerely,

Krista Wong
Master of Environmental Studies (MES) in Sustainability Management Candidate
School of Environment, Entreprise, and Development
Telephone: (647) 871-9229
Email: ktkwong@uwaterloo.ca

Under the supervision of Dr. Amelia Clarke
School of Environment, Enterprise and Development (Faculty of Environment)

University of Waterloo
Telephone: 519-888-4567 ext. *38910*
Email amelia.clarke@uwaterloo.ca.
https://uwaterloo.ca/implementing-sustainable-community-plans/

CONSENT FORM

By signing this consent form, you are not waiving your legal rights or releasing the investigator(s) or involved institution(s) from their legal and professional responsibilities. For phone interviews, vocalized consent will suffice when recorded.

I have read the information presented in the information letter about a study being conducted by *Krista Wong* of the School of Environment, Enterprise and Development at the University of Waterloo, under the supervision of Dr. Amelia Clarke. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I wanted.

I am aware that I have the option of allowing my interview to be audio recorded to ensure an accurate recording of my responses.
I am also aware that excerpts from the interview may be included in the thesis and/or publications to come from this research.
I was informed that I may withdraw my consent at any time without penalty by advising the researcher.

As this research project focuses on municipal implementation on climate change plans and not on individual opinion, ethics review by an Ethics Board at the University of Waterloo is not required. I was informed that if I have any comments or concerns resulting from my participation in this study, I may contact the Chief Ethics Officer at 519-888-4567 ext. 36005 or maureen.nummelin@uwaterloo.ca.

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.
☐YES ☐NO
I agree to have my interview audio recorded.
☐YES ☐NO
I agree that my name my be included in a thesis list of participants.
☐YES ☐NO
I agree to the use of quotations in any thesis or publication that comes of this research.
☐YES ☐NO

Participant Name: _____ (Please print)

Participant Signature: _____

Witness Name: _____ (Please print)

Witness Signature: _____

Date: _____

Appendix D – Municipal Informant Questions

KEY INFORMANT QUESTIONS (Semi-structured interview) ~30 mins. to 1 hour

Part A. Introduction
Introduction
The purpose of this research is to provide insights into designing cross-sector partnerships effective for achieving community-wide GHG emissions targets by examining implementation structures and outcomes in community climate action plans. Through this interview I hope to learn more about your community climate action plan implementation structures, as well as plan and partner outcomes. Some questions will have additional information beside it, such as definitions and examples.
Do you have any questions before we begin?

Note: Key structural features for implementation of a plan are structures in place that help to facilitate the implementation of a plan. For example, communication systems, partner engagement and attraction mechanisms, collaborative oversight arrangements, monitoring systems, and individual partner actions.

Part B. Consent

Part C. Interview

Q1: What is your role or position in the climate action plan?
Q2: When was the community-wide climate action plan adopted? began implementation?
Q3: How many partners are taking part in the implementation phase of the community-wide climate action plan, either implementing or helping to implement?

(More info: Partners are anyone or organization who is helping to implement the community plan. Partners can be found in various sectors such as NGOs, regional governments, electric utility, schools, school boards, gas utility, higher education institutions, business improvement areas, citizen groups, financial institutions, large companies, conservation authorities etc.)

Q4: Can you provide a list of the partners who are implementing on your community's climate action plan at the end of this interview?

Q5: Does your plan engage key organizations from different sectors and have a way to identify and add them? If so, how?

(ex. engaged as formal/ informal partners, task forces, partner committees etc.)

Q6: Does the plan have a collaborative oversight body to oversee implementation and for decision making? Who is involved in the collaborative oversight?

More info: Collaborative arrangement in place to oversee strategy formulation and implementation. (for example, committee or board, or staff coordinator, an NGO that oversees this? A decision making body? Etc.)

Q7: Do the individual partner organizations implement within their own organizations?

(ex. partners delegated tasks, partners voluntarily commit to actions within organization aligning with plan etc.)

Q8: Are there examples of joint implementation efforts by the partnership as a whole?
Q9: What communication system is used to allow communication to, and between partners relating to the plan?

More info: Communication – A communication system to maintain networking and knowledge sharing (ex. to reach citizens, to network? Partners provide updates annually, a communications plan, e-mails, galas, newsletters, secretariat manages website etc.)

Q10: What are the monitoring processes in place?

More info: allows progress to be assessed, adjustments made, plan renewal (ex. partners provide progress reports, secretariat monitors, committee decides on renewal etc.)

Q11: How does the current monitoring system allow for progress assessment, plan adjustment and plan renewal?

Q12: What progress has been made towards the emissions reductions target?

Q13: What collaborative actions have been implemented by the municipality?

(ex. coordinate tasks, provide community-wide budget, leading tasks and initiatives etc.)

Q14: What has been the experience (ex. benefits or disadvantages) to the municipality from collaborative implementation with partners?

More info: Partner outcomes are outcomes that partners experience from the collaboration. (Ex. improved networking and learning, improved reputation, community cohesiveness, progress towards goals, financial savings, relationships etc.)

Q15: Would there be another person in your organization who may have a perspective on this?

Q16: Do you have any questions for me?

Appendix E – Municipal Feedback and Appreciation

Dear *(Insert Name of Participant),*

I would like to thank you for your participation in this Master's research study entitled Implementing Community Climate Action Plans in Canada: The Relationship between Implementation Structure and Outcomes. As a reminder, the purpose of this study is to provide insights into designing cross-sector partnerships effective for achieving community-wide GHG emissions targets by examining implementation structures and outcomes in community climate action plans.

Please note that if desired, all responses to this interview are confidential and participants can be identified in my research as a municipal government staff member upon request. Once all the data are collected and analyzed for this project, this information may possibly be shared in the research community through seminars, conferences, presentations, journal articles, and to ICLEI Canada.

If you have any questions or concerns about the study, or if you are interested in receiving more information regarding the results of this study, or would like a summary of the results, please contact me by my contact details noted below, and when the study is completed, anticipated by January 2017, I will send you the information.

As this research project focuses on municipal implementation on climate change plans and not on individual opinion, ethics review by an Ethics Board at the University of Waterloo is not required.

Sincerely,

Krista Wong
Masters of Environmental Studies Candidate (in Sustainability Management)
School of Environment, Enterprise and Development
Faculty of Environment
University of Waterloo
Phone: (647) 871-9229
E-mail: ktkwong@uwaterloo.ca

Under the supervision of Dr. Amelia Clarke
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University of Waterloo
Phone: (519) 888-4567 ext. 38910
Email: amelia.clarke@uwaterloo.ca

Appendix F – Partner Phone Outreach Script

Hello, may I speak with _____ please?
Hi. My name is Krista Wong and I am a Masters student working under the supervisions of Dr. Amelia Clarke at the University of Waterloo, in partnership with ICLEI Canada to study cross-sector partnerships around climate mitigation and climate action plans.

As part of my thesis research, I am conducting interviews with implementation partners of select municipalities to understand partner actions and partner outcomes as a result of acting to help implement these climate or energy action plans to decrease greenhouse gases. Since (city, and city's climate action plan) has been chosen as a case study, I hope to get input from (organization name).

Is this a good time to give you more information about the interviews? Perhaps I can I send you more information about the interview through email?

NO – what would be a convenient time in (your city's) local time?

Yes – The thesis is entitled "Implementing Community Climate Action Plans in Canada: The Relationship between Implementation Structure and Outcomes". The purpose of this research is to provide insights into designing cross-sector partnerships effective for achieving **community-wide** GHG emissions targets by examining implementation structures and outcomes in community climate or energy action plans.

I would like to ask you questions about what (organization) actions, experiences and outcomes have been with collaborative implementation on decreasing GHGs to contribute to community-wide GHG targets. (ex. innovation, increased capacity, improved reputation etc.) The interview would take place over the phone which will take approximately 15 minutes to complete at a time convenient for you.
Are you interested in participating?

No – alright, thanks for your time, goodbye

Yes – Great, let's schedule an interview and I will send you more information about the study via email (schedule interview and get email)
Thank you very much for your time

Appendix G – Recruitment Email for Partners

Dear (Insert name of participant),

My name is Krista Wong and I am a Masters student working under the supervisions of Dr. Amelia Clarke in the School of Environment, Enterprise and Development at the University of Waterloo, in partnership with ICLEI Canada. The research project is entitled "Implementing Community Climate Action Plans in Canada: The Relationship between Implementation Structure and Outcomes". The purpose of this research is to provide insights into designing cross-sector partnerships effective for achieving **community-wide** GHG emissions targets by examining implementation structures and outcomes in community climate or energy action plans.

For the study, the (insert name of municipality ((and city's name of plan)) has been chosen as a case study municipality. I am contacting you as one of the main components is examining actions of implementation partners, and outcomes that partners experience as a result of acting to help decrease GHGs. I would like to seek your participation which entails an interview over the phone which will take approximately 15 minutes to complete at a time convenient for you. Please find more information attached in this e-mail. If you are interested and willing to participate, I look forward to your reply to this email (ktkwong@uwaterloo.ca).

Thank you for taking time to read this information and for your consideration.

Sincerely,
Krista Wong
Masters of Environmental Studies Candidate
School of Environment, Enterprise and Development
Faculty of Environment
University of Waterloo
Phone: (647) 871-9229
E-mail: ktkwong@uwaterloo.ca

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University of Waterloo
Phone: (519) 888-4567 ext. 38910
Email: amelia.clarke@uwaterloo.ca

Appendix H – Partner Questions

PARTNERS QUESTIONS (semi-structured interview) ~ 15 minutes

Part A. Introduction
Introduction
The purpose of this research is to provide insights into designing cross-sector partnerships effective for achieving community-wide greenhouse gas (GHG) emissions targets. One main component is examining outcomes that partners experience as a result of acting to help decrease GHGs. Through this interview I hope to learn more about your organization's actions and outcomes as it relates to contributing to progressing towards GHG emissions targets in the municipality. Some questions will have additional information beside it, such as definitions and examples.
Do you have any questions before we begin?

Part B. Consent
Part C. Interview

Q1: What is your role as it relates to the climate action plan?
Q2: Has your organization been implementing?
Q3: If so, what is your organization doing and/or has accomplished?
Q4: What have been the outcomes to the organization as a result of the implementation?
More information: Partner outcomes are outcomes that partners experience from the collaboration. (Ex. benefits, disadvantages, improved networking and learning, improved reputation, financial savings, etc.)
Q5: Do you have any questions for me?

Appendix I – Partner Information of Study Letter and Consent From

University of Waterloo

Date:

Dear *(insert participant's name):*

This letter is an invitation to consider participating in a study I am conducting as part of my Master's degree in the School of Environment, Enterprise and Development (Faculty of Environment) at the University of Waterloo in partnership with ICLEI Canada. I would like to provide you with more information about this project and what your involvement would entail if you decide to take part. Please take time to read the following information pertaining to the research project and discuss with involved parties regarding your participation.

Climate change mitigation at the community-wide level requires cross-sector partnerships in the community in order to stride meaningfully towards emissions reductions goals. The aim of this study is to identify the necessary collaborative implementation structures in place for success of community level climate action targets, as well as experiences of implementation partners. Also, providing insights into designing cross-sector partnerships can help to achieve community-wide GHG emissions targets. For the interview questions, there is no preparation required, but for your early reference, you will also be sent the list of interview questions prior.

The interview will be conducted over the phone, and will be approximately 15 minutes in length. You may decline to answer any of the interview questions if you wish. Further, you may decide to withdraw from this study at any time without any negative consequences by advising the researcher. With your permission, the interview will be audio recorded to facilitate collection of information, and later transcribed for facilitation of analysis. Interview recordings or any other data will be kept in a secure location, and will only be shared with the core research team. Participation in this study is voluntary. If you are willing to participate in this interview, please contact Krista Wong at ktkwong@uwaterloo.ca or (647) 871-9229. In your reply, please indicate a time when you will be available.

As this research project focuses on municipal partner implementation on climate change plans and not on individual opinion, ethics review by an Ethics Board at the University of Waterloo is not required. Should you have any comments or concerns resulting from your participation in this study, please contact Dr. Maureen Nummelin in the Office of Research Ethics at 1-519-888-4567, Ext. 36005 or maureen.nummelin@uwaterloo.ca.

I very much look forward to speaking with you and thank you in advance for your assistance in this project.

Sincerely,

Krista Wong
Master of Environmental Studies (MES) in Sustainability Management Candidate
School of Environment, Entreprise, and Development
Telephone: (647) 871-9229
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Email amelia.clarke@uwaterloo.ca.

https://uwaterloo.ca/implementing-sustainable-community-plans/

CONSENT FORM

By signing this consent form, you are not waiving your legal rights or releasing the investigator(s) or involved institution(s) from their legal and professional responsibilities. For phone interviews, vocalized consent will suffice when recorded.

I have read the information presented in the information letter about a study being conducted by *Krista Wong* of the School of Environment, Enterprise and Development at the University of Waterloo, under the supervision of Dr. Amelia Clarke. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I wanted.

I am aware that I have the option of allowing my interview to be audio recorded to ensure an accurate recording of my responses.
I am also aware that excerpts from the interview may be included in the thesis and/or publications to come from this research.
I was informed that I may withdraw my consent at any time without penalty by advising the researcher.

As this research project focuses on municipal implementation on climate change plans and not on individual opinion, ethics review by an Ethics Board at the University of Waterloo is not required. I was informed that if I have any comments or concerns resulting from my participation in this study, I may contact the Chief Ethics Officer at 519-888-4567 ext. 36005 or maureen.nummelin@uwaterloo.ca.

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.
☐YES ☐NO
I agree to have my interview audio recorded.
☐YES ☐NO
I agree that my name my be included in a thesis list of participants.
☐YES ☐NO
I agree to the use of quotations in any thesis or publication that comes of this research.
☐YES ☐NO

Participant Name: _____ (Please print)

Participant Signature: _____

Date: _____

Witness Name: _____ (Please print)

Witness Signature: _____

Appendix J – Partner Feedback and Appreciation

Dear *(Insert Name of Participant),*

I would like to thank you for your participation in this Master's research study entitled Implementing Community Climate Action Plans in Canada: The Relationship between Implementation Structure and Outcomes. As a reminder, the purpose of this study is to provide insights into designing cross-sector partnerships effective for achieving community-wide GHG emissions targets by examining implementation structures and outcomes in community climate action plans.

Please note that if desired, all responses to this interview are confidential and participants can be identified in my research as a partner informant upon request. Once all the data are collected and analyzed for this project, this information may possibly be shared in the research community through seminars, conferences, presentations, journal articles, and to ICLEI Canada.

If you have any questions or concerns about the study, or if you are interested in receiving more information regarding the results of this study, or would like a summary of the results, please contact me by my contact details noted below, and when the study is completed, anticipated by January 2017, I will send you the information.

As this research project focuses on municipal implementation on climate change plans and not on individual opinion, ethics review by an Ethics Board at the University of Waterloo is not required.

Sincerely,

Krista Wong
Masters of Environmental Studies Candidate (in Sustainability Management)
School of Environment, Enterprise and Development
Faculty of Environment
University of Waterloo
Phone: (647) 871-9229
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Appendix K – Saanich Climate Action Plan Structure

The following table shows the content of the Saanich Climate Action Plan. It was taken directly from the plan document's table of contents (Saanich, 2010).

Plan Section	Section Details
The Challenge	A global problem Measuring is the First Step
The Vision	
Policies in Action	Leading by Example The Saanich Carbon Neutral Calculator
Goals and Targets	Framework
Community Actions	Reducing Community Emissions 33% by 2020
Municipal Operations Actions	Reducing Municipal Operations 50% by 2020
Taking Action	Getting to 33%
1 Transportation	Transit Cycling Walking Driving Leading by Example
2 Buildings	Energy Efficient Buildings The Role of Forests Conserving Drinking Water Leading by Example
3 Waste	Saanich Community Waste Management Strategy Leading by Example
4 Energy Alternatives	Solar Heat Exchange District Energy Leading by Example
Next Step: The Climate Change Adaptation Plan	
Definitions	Appendix A

(Saanich, 2010)

Appendix L – Community Energy Initiative Table of Plan Structure

The following table shows the content of Guelph's Community Energy Initiative. It was taken directly from the plan document's table of contents (Garforth International llc, 2007).

Plan Section	Section Details
1. DEFINITIONS AND ABBREVIATIONS	
2. EXECUTIVE SUMMARY	
3. ENERGY CHALLENGES OF THE 21ST CENTURY	3.1. Global Overview 3.2. National Energy Overview 3.3. City Level Challenges 3.4. Supplemental Reading on Sustainable City Experiences
4. GUELPH'S CHALLENGES	4.1. Managing Growth Pressure 4.2. Long-term Competitiveness 4.3. Quality of Life 4.4. Community Response to the Energy Challenge of Growth
5. VISION OF A SUSTAINABLE ENERGY FUTURE	5.1. Community Energy Plan Vision 5.2. Sustainable Energy Goals 5.3. Benefits for the City of Guelph 5.3.1. Benefits for Guelph's Residents 5.3.2. Benefits for Guelph's Businesses 5.3.3. Benefits for the City Administration 5.3.4. Benefits for Financial Institutions 5.3.5. Benefits for Developers and Builders 5.3.6. Benefits for Canada and the Planet 5.3.7. Benefits for Energy Service Providers
6. PROFILE OF GUELPH	6.1. General Description 6.2. Historical Role in Community Energy 6.3. Present Day Profile 6.4. Economic Development 6.5. Crossroads in Development 6.5.1. "SmartGuelph" Principles 6.5.2. Developing Water Resources 6.5.3. Transportation 6.5.4. Waste Management 6.5.5. Waste-water Management 6.6. Overview of Built Infrastructure 6.7. Climate 6.7.1. Heating & Cooling Degree Days 6.7.2. Solar Resources 6.7.3. Wind Resources 6.7.4. Rainfall Data

7. ENERGY & WATER PROFILE TODAY	7.1. Process to Establishing CEP Baseline 7.2. Energy Use in Buildings 7.2.1. Residential 7.2.2. Commercial and Institutional 7.2.3. Industrial 7.2.4. Combined Industrial, Commercial, and Institutional Benchmarks 7.3. Energy Use in Transportation 7.3.1. Basic Travel Statistics 7.3.2. Findings from Recent Resident Survey 7.4. Total Energy Use and Greenhouse Gas Emissions 7.5. Water 7.6. Energy Supply and Organization 7.6.1. Brief History of Energy Regulation in Ontario 7.6.2. Distribution of Natural Gas in Guelph 7.6.3. Distribution of Electricity in Guelph
8. COMMUNITY ASSETS IN COMMUNITY RELATED AREAS	8.1. Overview 8.2. Guelph School Districts 8.3. Guelph City Commitment to Efficiency 8.3.1. Southend Library 8.3.2. Guelph City Hall 8.4. Guelph Hydro Administration and Service Centre 8.5. Woolwich Arms Hotel Sustainable Business Approach 8.6. Owens Corning "Energy: Mission Possible" 8.7. University of Guelph and Conestoga College 8.8. Guelph Hydro Conservation and Demand Management Program 8.9. Union Gas Conservation and Demand Management Program 8.10. Guelph City Water Conservation Initiatives 8.11. Organizations Supporting Sustainable Objectives 8.12. Local Companies in Sustainability Businesses 8.13. Real-estate Developers, Architects and Planners 8.14. Other Public Interest Programs and Successes 8.15. OMAF Cogeneration Installations 8.16. University of Guelph Central Steam System 8.17. Renewable Fuels 8.18. Sources for Funding and Intellectual Support
9. SUSTAINABLE ENERGY GOALS AND MEASUREMENTS	9.1. Background 9.2. Goal 1 – Attracting Investment 9.3. Goal 2 – Competitive Reliable Services 9.4. Goal 3 – Environmental Performance 9.5. Goal 4 - National Comparison

	9.6. Goal 5 - Public Investments 9.7. Communicating Community Energy Plan Performance
10. SUCCESSFUL COMMUNITY ENERGY PLANS	10.1. Benchmarking Community Energy Plans 10.2. Community Energy Approach - Copenhagen 10.3. Community Energy Approach - Mannheim 10.4. Community Energy Examples from North America 10.4.1. California Building Efficiency 10.4.2. Markham District Energy 10.4.3. Austin District Energy 10.4.4. Dockside Green – Victoria BC
11. GUELPH ENERGY AND WATER STRATEGY	11.1. Framework for Guelph Community Energy Plan 11.2. Maximizing Efficiency of Homes and Buildings 11.3. Residential Developments – Efficiency Expectations and Guidelines 11.4. Commercial and Institutional Buildings 11.5. Energy Performance Labelling of Buildings 11.6. Maximizing Quality and Efficiency of Industrial Development 11.7. Transportation Efficiency 11.8. Summary of Efficiency Opportunities 11.9. Ensuring Flexible Energy Supply 11.10. Integrating Renewable Energy Sources 11.11. Integrating Combined Heat and Power (Cogeneration) 11.12. Integrated Innovative Cooling Strategies 11.13. Integrated Network and Building Management 11.14. Establishing City Guidelines for Homes and Buildings 11.15. Accelerating CEP Implementation - Scale Projects 11.16. Scale Projects Selection Criteria 11.17. Guidelines for Energy Supply 11.18. Incentives 11.19. Regulatory Aspects 11.20. Managing the Process – City Leadership 11.21. Managing the Process – Community Engagement 11.22. Managing the Process – Energy Services Organization 11.23. Measurement, Reporting, and Communications 11.24. CEP Budgeting 11.25. Summary of Overall Energy Evolution
12. TYPICAL SCALE PROJECTS	12.1.1. General 12.1.2. Industrial Parks in the South 12.1.3. Campus Energy Master Plan – University of Guelph 12.1.4. High-Density Urban Redevelopment – St Patrick's Ward 12.1.5. Downtown Revitalization – Downtown Community

	Improvement Plan 12.1.6. Greenfield Mixed-use Neighbourhood – South Guelph Developments
Appendix 1: Mannheim Micro-Cogeneration Press Release **Appendix 2: Student Workshop – School Board Energy Programs** **Appendix 3: Environmental Features – Civic Administration Center** **Appendix 4: Ghesi 2005 Conservation And Demand Management Program Results** **Appendix 5: Ghesi Smart Metering Pilot Started In 2006** **Appendix 6: List Of Example Scale Projects** **Appendix 7: Public Forum** **Appendix 8: Full Size Graphs Enlarged For Readability** **Appendix 9: Building Labeling Information**	

(Garforth International llc, 2007)

Appendix M – Community Energy & Emissions Plan Structure

The following table shows the contents of the Community Energy and Emissions Plan. It is taken directly from the plan's table of contents (HB Lanarc, 2010).

Plan Section	Section Details
Acknowledgements	
Executive Summary	
1. Introduction	1.1 Report Structure and Approach 1.2 City Sustainability History and Low Carbon Vision 1.3 Overview and General Approach
2. Situational Analysis	2.1. Climate and Energy Context 2.2. Current Baseline 2.3. City of North Vancouver Energy & Emissions Profile
3. Low Carbon Path	3.1 City of North Vancouver Targets 3.2 Community Overview 3.3 Land Use 3.4 Transportation 3.5 Buildings 2.6 Energy Supply 3.7 Solid Waste 3.8 Urban Agriculture and Landscape 3.9 Education and Outreach
4. Low Zone Design Guidelines	4.1 Urban Centre Zones 4.2 Medium density, Mixed-Use Oriented Zones 4.3 Residential Oriented Zones
5. Near-Term, Estimated Direct Costs	5.1 Transportation 5.2 Buildings 5.3 Energy Supply 5.4 Solid Waste
Appendix A: Energy and GHG Emission Trends **5.5 Preliminary Simple Growth Forecast**	
Appendix B: Detailed Modeling Results	
Appendix C: Technical Description of Modeling **5.6 Transportation Emissions Modeling** **5.7 Buildings Energy and Emissions Modeling** **5.8 Solid Waste Modeling**	

(HB Lanarc, 2010)

Appendix N – Community Energy Action Plan Structure

The following table shows the content of London's Community Energy Action Plan. It was taken directly from the plan document's table of contents (Corporation of the City of London, 2014).

Plan Section	Section Details
1. Creating a Community Energy Action Plan	
2. Community Energy Action Plan (2014 – 2018)	2.1 The Defining Principles and Priorities 2.2 Goals of London's Community Energy Action Program 2.3 Key Community Energy Stakeholders 2.3.1 City of London 2.3.2 London Hydro 2.3.3 Union Gas 2.3.4 London District Energy 2.3.5 Advisory Committee on the Environment (ACE) 2.3.6 Mayor's Sustainable Energy Council (MSEC) 2.3.7 London Home Builders' Association 2.3.7 London Property Management Association 2.3.8 London & St. Thomas Real Estate Board 2.3.9 London Economic Development Corporation 2.3.10 London Chamber of Commerce 2.3.11 London Development Institute 2.3.12 Local Businesses 2.3.13 Local Institutions 2.3.14 Local Community
3 Action Plan Elements	Policy Support for Community Energy Action Planning Reporting & Education about the Economic & Environmental Considerations of Energy Use Single-Family Homes Multi-Unit Residential Buildings Commercial & Institutional Buildings Industry and Manufacturing Stores, Restaurants, & Other Small Businesses Local Energy Production And Co-Generation Of Heat & Power Vehicles And The Transportation System
4 Reporting on Progress	4.1 Annual Community Energy & Greenhouse Gas Inventory Report 4.2 Key Progress Indicators

	4.3 New Progress Indicators 4.4 Open Source Data Solutions 4.5 Reporting on City of London Community Energy Actions

(Corporation of the City of London, 2014)